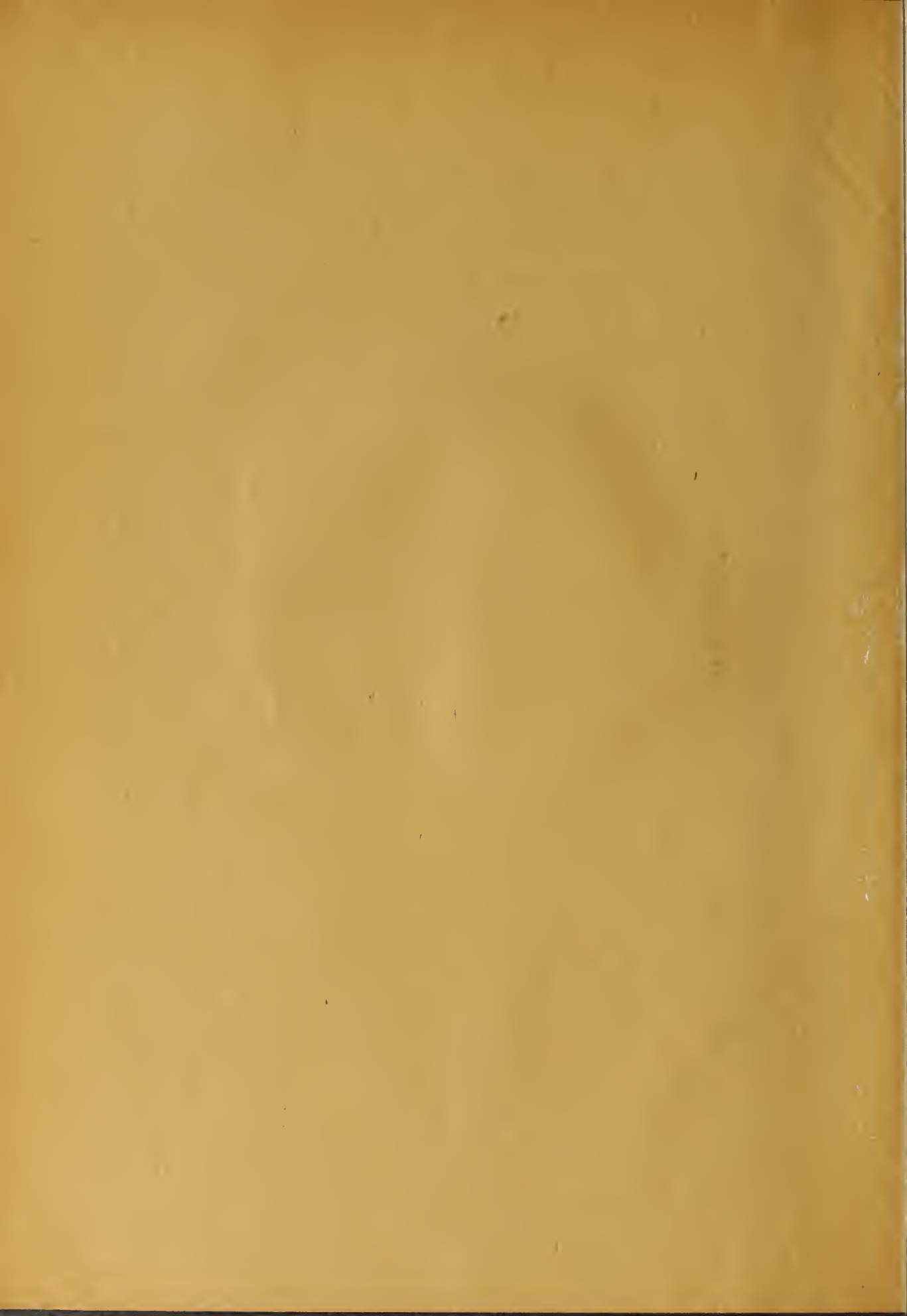


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THE JOURNAL OF THE TENNESSEE State Medical Association

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H. H. SHOULDERS, M.D., Secretary and Editor

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THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

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H. H. SHOULDERS, M.D., Secretary and Editor

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Volume XXIX

JANUARY, 1936

No. 1

STATE-MEDICINE*

H. H. SHOULDERS, M.D., Nashville

FOR REASONS which will be obvious, it is necessary to discuss, at least, briefly, the subject "Medicine," as an introduction to the hyphenated subject "State-Medicine."

Time will not permit a lengthy discussion of this phase of the subject. An attempt will be made, however, to give a brief sketch of the background of medicine—something of its evolution—something of its government—something of the attitude of doctors toward the science of medicine and something of the setup or organization by which medical services are rendered in a free country.

Broadly speaking, medicine embraces a science and an art. The science of medicine embraces all the sciences which have to do with the knowledge we have concerning the cause, the prevention, the recognition, and the cure of diseases.

The art of medicine is another thing. It is an individual accomplishment. It embraces those qualities of a *person* which enables him to interpret phenomena associated with illness and to appraise the various influences which may have a bearing on a given case. The faculty of making accurate observations and drawing sound conclusions therefrom and of applying treatment

with skill and wisdom is something of the art of medicine.

The science of medicine is a product of the ages. No single age, no race, no nation, no group of people anywhere on earth can justly lay claim to the ownership of this science.

Substantial contributions have been made to its progress from too many sources in too many different ages for any group to make such a claim. Doctors, as such, certainly make no such claim.

The organized profession of medicine, however, in our humble judgment may, with propriety and justice, claim the right of trusteeship over the science.

This trusteeship should embrace all that is implied in the word trustee. I submit that doctors have earned this right and I would also submit that it is best for the science and best for the humanity it serves that this relationship should be preserved.

Such a trusteeship is justified by the attitude doctors have displayed toward the science of medicine on the one hand, and toward humanity on the other hand for a period of more than twenty-three hundred years.

When the science of medicine was in its infancy, the leaders of medical thought recognized that beneficial discoveries would be made from time to time and that the human quality of greed might assert itself and by some maneuver obtain control over the science by means of patent right.

*An address delivered before the Women's Civic Forum of Nashville in a program sponsored by the Woman's Auxiliary of the Tennessee State Medical Association, April 2, 1934.

THE PRINCIPLE PROHIBITING PROFIT FROM MEDICAL DISCOVERY OR INVENTION

It will be remembered that those early doctors were also philosophers. Hippocrates and Galen and others were among them. They may not have known much medical science, because there was little to be known, but they did know *human nature*. This apparently has not materially changed through the centuries. These philosopher-doctors knew that no such control over medical science should ever exist and for this reason a code of medical ethics was proposed by Hippocrates and embodied in the Hippocratic oath. One of the first principles was one which prohibits any doctor from realizing a profit from a patent right over any discovery or procedure which would be of benefit to sick humanity.

That principle has been observed to this day. Its value neither you nor I could even approximately estimate.

PRINCIPLE WHICH PROHIBITS UNWARRANTED CLAIMS

Secondly, these philosophers recognized that people are emotional toward a member of the family who is ill, and that sound reasoning may be dethroned, for the moment, by such emotion and make such people easy victims of the charlatan who would make wild claims as to his ability to cure an ailment. They recognized the profits which might accrue to the unscrupulous doctor under such circumstances. They also recognized that it would be disastrous to medicine and to sick humanity alike. They therefore introduced into the code the principle which prohibits any doctor from claiming power to cure the incurable.

PRINCIPLE OF FREEDOM OF CHOICE OF PHYSICIAN

It was also recognized that the *greed for power* has always existed in human nature, and that this greed for power might assert itself by groups of doctors either as private individuals or as governmental agencies, through an attempt to gain control over individuals in the selection of the doctor who shall come into their homes and treat them or counsel with them on their health prob-

lems. These philosophers also recognized that such power should never exist and that if it should exist, it would be disastrous to the patient and the doctor in its final effects. For this reason there was embodied into the code of medical ethics the principle that every patient must have the right to select his or her doctor. This principle preserves complete liberty on the part of the patient in the selection of a physician. It preserves complete liberty on the part of the doctor in accepting or rejecting a patient. Out of such a relationship there comes the heartiest cooperation. The doctor on the one hand is inspired by the confidence of his patients and their families. The patient on the other hand is confident and cooperative and satisfied. The satisfactions alone which grow out of this relationship warrant its preservation on down through the ages. This relationship is known as "*the doctor-patient relationship*."

PRIVILEGE COMMUNICATION

It was early recognized that it might often be necessary for a patient to disclose some deep hidden secrets of his life in order for a doctor to arrive at the proper diagnosis of his case. It was also recognized that such disclosures, *if spread*, might become community gossip and be more disastrous in their effects *on a life* than the disease itself would have been. For these reasons there was written into the code the principle that such revelations to a doctor must ever remain secret with him unless ordered to be disclosed by a court of justice.

OBLIGATION TO CHARITY

Lastly, these forefathers of ours recognized that the poor we would have with us always, that the widow and the orphan would often need medical care and be unable to pay for it. For these reasons doctors were enjoined to be ever liberal with their services to the poor and needy, *without cost*.

I assert boldly that this injunction has been observed. It is observed today to an extent which is beyond any possible reason.

The experience of humanity through these centuries has demonstrated the value of each of these principles. They have be-

come a part of the rich tradition of medicine. Wherever these principles have been trampled underfoot by *government or by a group*, the results have not been good.

SCIENCE

The science of medicine is just as cold as any other pure science. *It becomes warm and useful and alive only when it becomes a part of the life of a person endowed with the qualities to apply that science to the needs of humanity.* That is what we call the art of medicine.

It has been urged, and on very good ground, that the art of medicine is even more important than the science. Each, of course, is utterly useless without the other.

A knowledge of science of paint and color alone would never produce a Rubens or a Van Dyke. The science plus some qualities *in a human* did produce a Rubens and a Van Dyke.

The acquisition of a knowledge of the science of medicine is a simple academic process not unlike the learning of any other science. The acquisition of the art of medicine is something different by far. It is so big that a fair proportion of those who learn the science *never acquire the art.*

THE ORGANIZATION OR SETUP FOR RENDERING MEDICAL AID

The setup in a free country for rendering service is very simple. It consists of a doctor plus professional equipment and the facilities for giving the proper care to sick people. Some years ago the state recognized the necessity for setting up an authority to pass on the qualifications of those who would engage in practice. This authority is known as the Board of Medical Examiners. It is the business of this board to examine applicants and issue a license to those found qualified to practice. The standards of qualification have been raised from time to time as progress has been made.

It has often been alleged even by some fairly well informed people that this setup was created by the doctors for their personal and professional benefit. Nothing is further from the truth. The word license should never have been used in this connec-

tion. The term "certificate of qualification" should have been used instead, because it would have conveyed an accurate meaning.

A doctor who has complied with the requirements of law may then engage in practice.

He competes with his fellows in the profession for the goodwill and confidence of patients. He competes, however, on an ethical plan under the code of ethics, that is, provided he is an ethical man.

Individual patients are free to consult him or any of his confreres. It will be recognized that if a doctor is unethical toward his fellows he will also be unethical toward his patients. This fact should be borne in mind by lay people.

Now as to the facilities. The churches were leaders in the creation of hospitals in which people could be better taken care of when sick. Then special nursing care was developed. Then the medical setup consists of doctors, nurses, hospitals and equipment.

The method by which this setup works in a free country may be best illustrated by taking an imaginary instance. We will say that little John, age 12, son of a family in moderate circumstances, is taken ill suddenly. The father or mother selects from among the available doctors in the community the one of preference and he is called. He responds. He takes the history, he examines the case. He then tells the responsible parents what he thinks is the matter and what should be done. That parent is free to accept or refuse that advice. That parent is free to discharge that doctor or call another in consultation for his opinion.

Let us assume that an operation is indicated. The parent is still boss of the situation. He is at liberty to choose the surgeon who shall wield the knife. He selects the hospital for the child. By such a relationship throughout, the case is handled. That American citizen, the parent of the child, the head of a home, is in complete control of the situation throughout.

That particular system has given the people of the United States the best medical care to be had on earth today. Now there is one more obligation. It is the duty of the

parent to remunerate that doctor or those doctors, not in accordance with a fixed schedule of fees, *but in proportion to the services rendered and the ability of that person to pay for such services.*

With these few thoughts before you, we are ready to take up the question of "State-Medicine."

The term "State-Medicine," as usually used, refers to a system of practice in which the state finances the cost of care and in which the patient has no voice in the selection of his doctor. You will please note carefully that there are two elements in this definition. The first element is "the state pays the cost." The state actually delivers the services. The second element is "the patient has no voice in the selection of the services."

This is the definition of an absolute "State-Medicine." Examples of varying degrees of "State-Medicine" are found in various parts of the world. In Russia is found an example of pure "State-Medicine." There is no difference between state medicine and communistic medicine.

The state is divided into areas, and in each area there is set up a medical service unit consisting of doctors, nurses, and some equipment. There, of course, is a head or director of each local unit. The areas may be a portion of a county or a whole county. It might be a whole town or a particular section of a city. These small areas are combined into districts over which there is a staff. Then there is the state headquarters staff presided over by, we'll say, a commissioner who is the complete boss of medical activities over the state. He is vested with autocratic power as to the *distribution of doctors and nurses and as to the disposition of patients.* These doctors and nurses of course are paid a salary by the state. The cost of equipment, transportation, hospitals, et cetera, are all borne by the state. The taxpayers pay all these costs. That is the setup for rendering services under a system of "State Medicine."

How does this setup work. Let us take the same imaginary case of John, age 12, of a family in moderate circumstances. John is taken ill and the father calls the *medical*

unit of his area for medical services. Someone connected with the unit who is on duty at that hour is assigned to make the call. Let's assume he responds promptly. He makes an examination and announces his decision. John's father again wishes consultation. He is told, "No, this will be a useless expense." The parent is *ordered* to take the child to a *designated* hospital. The mother says, "No, I don't want to do that." The mother is then told that she no longer has responsibility concerning the medical care of this child, that this responsibility belongs to the state, and that for the purposes of these services the child belongs to the state, and this operation will be done irrespective of any wishes she may have. The mother again says, "If my child must be operated on, I want a certain surgeon I know to perform the operation." She is informed, in turn, that the case will be cared for and operated by the person on duty at that particular time.

So much for the handling of the patient. What about the effect on the medical care?

You will remember that under a democratic system of medical practice the doctors are competing with each other for the confidence and goodwill of patrons governed in this competition by the principles in the code of medical ethics.

Under the system of "State-Medicine" the doctors are competing with each other, *not for the goodwill and confidence of patrons. They are competing for political preferment,* and they are governed in this particular competition by whatever ethical principles apply in political conduct. Doctors are engaged in a governmental activity, governed only by departmental regulations. The most valuable art a doctor could possess in such a setup is the art of *political manipulation.*

The science of medicine might remain the same or even progress, but the art of medicine deteriorates with a rapidity you cannot estimate, and please remember the science without the art is of very limited usefulness.

THE COST

It is logical to ask the question, "Would the cost of medical care on the whole be

reduced?" The answer is very positively, "No." The costs are actually increased enormously. The method of paying the cost has been changed. The total cost has been increased.

Why are the costs increased? The answer is very simple. In the first place the government never does anything at less cost than the same work could be done under private management.

Second—the patients have a different attitude toward the services. Minor illnesses which are taken care of in the home today, and which may well be taken care of in the home, demand hospitalization on the ground that the service is already paid for.

Unnecessary hospitalization then becomes one item of increased cost.

Next, unnecessary demands for medical attention multiply the costs of services. Add to this the cost of a political setup such as administrative boards, etc., and you have a fair picture of the reasons for an enormous increase in the total costs of medical care. Administrative costs vary. They run as high as forty-five per cent of all costs in some instances.

There has been a great deal of political deception going on in recent years to the effect that people can have their cake and eat it too; or, in other words, when the cost of a certain activity is transferred from the individual to the state the individual is relieved of all costs. The slap back comes in high taxes which the individual cannot dodge.

Another species of deception is to the effect that the people can transfer all these duties to the state and still retain their individual liberty.

It is generally recognized that when the number of governmental employees becomes much larger than is the case today they will hold the balance of power in government.

Not long ago the Professor Emeritus of political economy at Harvard University said:

"Heavy taxes mean numerous tax eaters, that is, voters on the pay rolls of our various governments. The interests of these voters are opposed to government retrenchment or economy.

"These interested voters may soon, if they do not already, hold the balance of power in our government." (Cosmopolitan Magazine, April, 1934.)

You will please imagine the extent to which the government employees' voting power will be increased by the inauguration of a system of state medicine. The facts are they would have absolute power. Civilians would still have the ballot, but their voting would become but an empty gesture. The votes and the political influence of governmental agencies would be overwhelming.

The next question, "Are death and illness diminished by state medicine?" The answer again is emphatically, "No." There are no reliable figures on mortality or morbidity which indicate that any improvement is brought about by state medicine.

Then the question, "Why all this agitation in this county? What happened to bring it about?"

It is to be admitted that an agitation is going on and several things have happened. Numerous movements have been inaugurated in recent years which at first glance appear to be laudable humanitarian movements, but some of these, if encouraged, will lead us nowhere else but into a state of complete communism in medicine.

A few examples will be cited. First, in the year 1927 there was organized in this country a committee which became known as the Committee on the Costs of Medical Care.

Please note that they were not concerned about the efficiency of medical care. They emphasized *cost* alone both in the name of the committee and in the activities it carried on. On this committee were a large number of sociologists, some of whom have Ph.D. degrees and are called Doctor. They had a few economists and a very slight sprinkling of doctors engaged in practice. I believe there were two doctors who actually engaged in general practice.

The director of the investigations was a doctor of philosophy who had previously written a book in favor of state communism in medicine.

The activities of this committee were financed by several foundations. Notable

among them were the Julius Rosenwald Fund and the Milbank Memorial Fund. This committee spent a million dollars over a period of five years in conducting investigations in various parts of the country and finally made a report which consisted of a majority and a minority report and a mixed one. The majority report recommended the setting up in communities throughout the United States an organization, such as I described as "state medicine." They rather split the difference and recommended that it be financed from private sources, community sources and by taxation. That represented a sort of straddle between the private practice of medicine and state medicine, but a funny thing happened—all the committee finally recognized that the doctor-patient relationship, which was described to you a while ago, should be preserved. They failed utterly to describe how this would be accomplished in the setup they recommended.

They were astonished by another revelation to the effect that the average income of doctors is not large, but to the contrary, is small. They even undertook to kid the doctors by asserting that by the adoption of this plan the doctors' income would be increased. So the recommendations have several inconsistencies, among them are the following:

First, it will reduce the cost of medical care, and at the same time increase the income of doctors.

Second, it will be operated by civic organizations by personal payments and by government appropriations, and still never become political.

Third, it will operate as a quasi state institution and still preserve the doctor-patient relationship. These inharmonious propositions in the main are ridiculous, and some are impossible.

A few examples of the individual investigations should be referred to. Chester County in West Tennessee was selected as a county typical of the entire South. What they found there was taken as a basis for the conclusions and recommendation they made concerning rural practice in the entire South. There is no use in my telling you

that Chester County and Maury County and Carter County are just as different as three separate communities possibly could be. The basis for such a conclusion is found in the fact that if you analyze a few drops of water out of a large tank, you learn what the entire tank contains. These particular scientists assume that people in their community life behave like molecules of water toward each other.

Next, they gave an extended report of an investigation made at Fort Benning in Georgia. You will understand this is a regular army camp in peace time. Its personnel is composed of private soldiers, officers and their families. The overwhelming number of the population of the camp, of course, are men. They are men approved for military service after a thorough physical examination. You will also appreciate that the camp is kept sanitary—that the food is inspected and well prepared. The meals are eaten at regular hours. You will also appreciate that all these people wear the same clothing. All these men go to bed at a certain blow of the bugle, and get up at a bugle call. You will understand that their entire daily routine is built around the idea of keeping them physically fit. They are under the command of the commandant. You will appreciate that the cost of giving medical care to this group of people by salaried army doctors could in no way be assumed to represent the cost of medical care to a similar number of people in civilian communities. By virtually ignoring all these fundamental facts, this committee undertook to give facts ascertained as to the costs of medical care in this military camp, as a basis for estimating what the costs would be in civilian communities, if military methods were employed.

You will see the committee was in search of evidence to support a *preconceived notion*—not facts.

The report, as a whole, made very little hit, notwithstanding the fact that they used every scheme known to propagandists to give their reports the widest possible publicity.

There are two members of the committee, and two foundations which contributed,

who simply will not be satisfied. One of these is Mr. John A. Kingsbury, LL.D., Secretary of the Milbank Memorial Fund, and the other is Michael Davis, Ph.D., of the Julius Rosenwald Fund. These men continue their propaganda activities. One of these, Mr. Kingsbury, made a trip to Russia last year. My understanding is that he spent thirty days in that country on a more or less personally conducted tour. He collaborated with Sir Arthur Newcomb, of England, in writing a book entitled, "Red Medicine," which made its appearance recently.

This book is representative of a type of propaganda that is going on. As such it warrants some attention. In the first line of the preface they say:

"When a Russian becomes ill the government does something about it."

They did not mention the fact so prominently that when a Russian disobeys the government authority he may face a firing squad as many thousands have done. A little further along they say, "This vast and fascinating experiment in socialized health may not turn out as well as its originators expected." Further down in the preface it is admitted that a great deal of their information was obtained by *interviews with interested persons*.

The book deals to some extent with the early steps taken in the adoption of communism.

They quote Mr. Lenin as saying that complete communism cannot be accomplished at once. It must be accomplished *by degrees*. They also incorporate in their book the following statement by him:

"The Bolsheviki must resign to their leaders their *intellectual liberty and abandon their right of private judgment*."

They further show that complete communism was accomplished *by degrees*. First the production and distribution of goods was communized. Then the great estates were parcelled out. Then they gradually crept in on the products of the soil. When they failed to succeed at taking the products themselves, they substituted a system of *taxation* as a means of obtaining all the excess grain the peasants had. Since that

time they have gradually established, they say, a *military discipline on the state farms*. Medicine was communized also by degrees. A few mortality and morbidity figures are given which are of interest.

For example—the infant mortality rate per 1,000 babies in Moscow is 131. In Leningrad it is 151, and in another town with an unpronounceable name it is 178. These rates are several points higher than the infant mortality rate throughout the United States today.

They give some figures as to morbidity, that is to say—the prevalence of certain preventable diseases as compared with England and Wales. They are as follows:

	<i>Russia</i>	<i>England and Wales</i>
Dysentery . . .	177,252	573
Typhoid Fever.	171,263	2,835
Typhus Fever..	33,121	000

You can form your own conclusions as to the efficiency of the system from these figures. They quote a statement from Mr. Lenin to the effect that of each 100 Bolsheviks there is one Bolshevik at heart, thirty-nine rascals and sixty fools. They emphasize that mothers are encouraged to turn their babies over to state institutions called "creches." Three million children are thus being cared for now.

I quote again — "It has constituted a single unit system of medical service for the population, freed from the complications, overlappings, and gaps of Western medicine."

Again I quote—"What Russia has accomplished in its courageously original schemes for the health and social well-being of its people constitutes a *challenge* to other countries."

Such meager information as they give concerning costs indicates that a much larger percentage of the income is spent in Russia for medical care than is the case in this country. They furnish the information that doctors work about six hours per day for the state. They cite an instance in a community with a population of 25,000 in which the little medical unit in that country took care of 1,800 patients in one day. This, to these laymen, may look like won-

derful service. To a doctor who knows anything about the care of sick people the statement is utterly ridiculous.

They give one *no* such picture of horror, degradation, poverty and military discipline as is portrayed in the book, "Strange Paths," by Louise Garard, 1934. A perusal of this book might do one good. Finally they quote from a Russian professor, surely by oversight, to the effect that "aleness in Russia has become almost impossible; that for real rest, these Russians need a greater aleness." The professor asserted that aleness is an important ideal to be entertained now in Russia.

Humans have qualities of mind and soul which lower animals do not possess. This fact is lost sight of by too many of those who try to deal with medical problems en masse and regiment all human actions under government bosses.

Don't you think it a bit strange that this publication should originate from the source it does, and be circulated so soon after the government of the United States recognized the government of Russia?

The intimation, at least, is in the book that communism in America should be adopted as a form of government *by degrees* and that the establishment of communism in medicine should be the first step in that larger accomplishment.

The communism of medicine can be more easily accomplished at this moment in the United States. A great deal of prejudice has been built up against doctors. A large number of sociologists have been created in recent years who have developed a few smattering notions concerning medical care. They are making all sorts of assertions, and trying to support them with prejudice whenever possible and at times by outright falsehood.

There are other evidences of a very strong trend toward state medicine by certain types of leadership in our own people. Governmental health departments have displayed a very strong disposition to step beyond the bounds of their proper spheres of activity to take up purely personal and individual health problems as a part of their function.

There are some distinctions which should be very clearly made in your mind concerning the duties and functions of government.

Public health departments were created in response to very definite need for such departments. The medical profession sponsored the legislation which created them. They were created and clothed with power for the purpose of using executive force in controlling the spread of contagions and in controlling the environmental conditions which cause disease. They were created to exercise government force where government force is necessary to accomplish a result. They were never created with the idea that they would become a sort of *personal charity agency*. There was a time when smallpox was controllable only by the enforcement of quarantine regulations. It was necessary to have an officer of the law to proclaim and enforce such quarantine. One neighbor cannot quarantine another neighbor. This same rule applies to all other contagions.

It is obviously necessary to have an officer of the law to regulate and enforce the purity of public water supplies and public food supplies. It is very necessary that a public control be exerted over the purity of public milk supplies. It is necessary for an authority to control the sanitation of public premises and private premises too, as to that matter, to the end that these may not endanger the lives of people. These and other similar activities are highly important and when efficiently carried out accomplish wonders in safeguarding the lives of people.

With the progress of science complications have arisen. For example, smallpox was once controllable only by quarantine—has now become controllable by individual action. I can obtain a vaccination which is a simple, inexpensive and safe procedure, and affords certain protection. Science has placed in my hand the power to accomplish my individual protection against this disease. I therefore do not need government protection. If the government wishes to carry out the procedure of vaccination it does so as an act of charity toward me. As a father, I have the power to protect my

children against smallpox and diphtheria by having them inoculated. That is a part of my parental duty, not unlike the duty of protecting them from the weather, and from hunger, and so on down.

Another example, hydrophobia has been raging in our own midst in recent years. There is almost a continuous stream of children receiving Pasteur treatments consisting of fourteen or twenty-one hypodermic shots. These treatments have the following effects: they prevent a person from developing hydrophobia when exposed to the disease by the bite of a rabid dog. I am capable of taking care of the Pasteur treatment for my child—it is not expensive, but I am helpless to deal with the dog situation which constitutes the real danger. If the government will deal with the dog situation the child will not be bitten by a rabid dog when at play or on the way to school. Wouldn't it be nice if no children were ever bitten by a rabid dog? I cannot muzzle my neighbor's dog—the government can. By the enforcement of a very simple regulation as to dogs, Old England controls human rabies. It is efficient and inexpensive. I hope you can draw a distinction between a proper governmental function and an individual responsibility.

At this point I would like to remind you that the major scourges of humanity were conquered before any of the so-called modern departments were created. I refer to smallpox, typhus, typhoid, yellow fever, and the bubonic plague, et cetera.

Some one says every child ought to have these inoculations, but the parents of children will not go to a doctor and have these treatments given. My reply to such a statement is that it argues in favor of a state *subsidy of parental neglect*. You wish to put a tax on the efficient to compensate for the neglect of a parent. Personally, I am far more in favor of punishing parental neglect than I am in favor of subsidizing it, at the state's expense.

Another proposition is this: When a state department branches over from its executive function and takes up the individual problems of people it has launched state medicine to *just that degree*. That is com-

munitistic medicine in part. With the broadening of that activity medicine becomes increasingly communistic. The degree of communistic medicine in a state corresponds to the degree to which the activities of the public departments are diverted from public problems to personal problems.

Some one argues that the people may be ignorant and not avail themselves of these benefits. In reply, may I say that our educational system falls down if people remain ignorant of these very simple vital facts. I agree with you that it is more important to know some living vital facts today than it is to know about the speculations of *some as to how the world began*.

I personally would favor placing a handsome placard on every school building and every public place in the state on which these simple vital facts are stated in such plain language that no person could be ignorant of them.

You will ask, "How will the indigent receive the treatment?" My reply is, "The indigents will receive their treatments just as they receive treatments for pneumonia, broken legs and the rest. Doctors do not collect fees from indigent people. They would not collect fees for doing these minor things, when they do not get fees for the major work which requires time and expense to carry out."

Another argument which is advanced is to the effect that this is a good thing and should be done by the state. We agree that it is a good thing to do, but the doing of every good deed is not necessarily a function of the state.

Religion is a good thing, but would any one argue that the state should run our churches, pay their pastors and see that every child has a good religious training? Yes, religion is a good thing but it is not a function of the state.

The church was once a part of the state. History records the tragedies that it brought.

The cleanliness of children is a fine thing. The cleanliness of their person, their clothing and their surroundings. Is it your opinion that the state should mop the floors, bathe the children and launder their cloth-

ing? If you argue for all those, you are arguing for communism, not charity.

I hope you understand by now that doctors are not opposed to public health departments. Doctors are opposed to government departments neglecting the duties for which they were created in order to expend their activities in the solution of individual problems. The issue is not what some of you have been led to believe, as being between the selfish, hardhearted attitude of doctors on one hand opposed to the unselfish, sympathetic, self-sacrificing attitude of public officials on the other. No, the issue is between two principles or philosophies. One favoring democracy and charity under it on one hand and the principles of communism on the other. There is gradually growing up a dual system of medical practice. One conducted by private practitioners, the other, though limited, conducted by salaried employes of the state. I will ask you this question, "How long do you think a dual system can endure as the aggravations which grow out of such a situation multiply?" Those aggravations are numerous and are becoming more numerous.

Some of my references to doctors of philosophy have not been complimentary. There are among them, however, some who hold different views from the others. I shall refer to one in particular. Dr. Hutchins, the newly-elected president of the University of Chicago, recently made an address entitled "Back to Galen." Galen, you remember, was a doctor and a philosopher who lived about the year A.D. 400.

Dr. Hutchins made some rich comment on things that are happening now. He referred incidentally to the effects of some of the lay education in medical matters that has been going on. He made the observation that "the public has become hysterical in matters of health and that health has succeeded happiness as a ruling passion." He also made the observation that the accumulation and cataloguing of a lot of data does not constitute education, and that modern education is coming to consist of an abundance of catalogued facts, and a sparsity of ideas.

It was Galen who emphasized the importance of recognizing the body of a human being as a biologic whole, and not as an aggregation of parts such as an automobile. It is the modern departure from that philosophy which caused Dr. Hutchins to say, "Let's go back to the philosophy of Galen." The attempt on the part of individuals and governmental departments to segregate different duties and different functions and different parts of the human body and different parts of the family unit and so on, ad infinitum, is responsible for much confusion.

You will remember that in the Declaration of Independence of the United States the *pursuit of happiness* was emphasized. The authors of that document recognized that what might make happiness for me might not make happiness for you, and that you would find your greatest happiness if given the liberty of pursuing it in your own way. Longevity was not their only goal.

It is important to remember that you may give up the *treasured thing we call liberty* in an effort to accomplish *longevity* and fail at that. In my opinion, it would be a poor bargain if you could.

It is generally recognized that there are four fundamental necessities of life—food, clothing, shelter, and medical attention. A barefoot, ragged child is an object of pity. A hungry child is still more of a pity. A child without a home is worse. A child without medical attention when he needs it is a tragedy. We have all seen them. I boldly assert here and now that the children of the United States in the last four years have suffered more from the lack of food, clothing, and shelter than they have suffered from the lack of free medical attention when sick, notwithstanding the fact that, in the main, our system of medical practice in America is still democratic.

I will also assert that the same arguments which will justify the communization of medicine will also justify the communization of the other necessities.

I can visualize a communistic clothing center in the same block with a state medicine clinic. The facts are that communistic methods are far more suited to clothing

than to medicine. We could set up a board of scientists who would prescribe the color of the clothes we are to wear—men and women—the weight it should be in our various latitudes and seasons. The peculiar cut for each season could be prescribed just as our military uniforms are prescribed today, and I dare say that the elimination of all profit and all individual liberty in the selections of color and weight, cut, etc., would reduce the cost of clothing in the United States by a sum quite sufficient to meet all the costs of medical care, also the public, as a whole, might actually be better clothed than is the case today. Please understand I do not advocate that.

Charity is a problem regardless of the particular need of the moment in a given case. We doctors will join with lay people in providing the four fundamental necessities for all the indigent in our midst and we will agree to do it without a profit. The facts are we already do it without a profit. We will also do another thing. We will join you in defining what is meant by the word "indigent." There has grown up a multiplicity of notions as to what constitutes indigency. One emphasizes this, another that, and so on. We will also join you in classifying our people according to such a definition. When this is done we may deal with the problem of indigency as such, after a diagnosis of each case has been made. Then we will not employ so many shotgun prescriptions as we do now.

We will also join you in preserving our system of liberty in America against the clever sneaking approach of those who would destroy it to satisfy the desires of a few political self-seekers, a few communists, and a few honest, but misguided souls.

I would not undertake to tell you that medicine in our state and nation is perfect. No, it has its faults, and we doctors recognize these faults far better than our critics.

We also recognize that human nature itself has some faults. Each of you wives present, if pressed to do so, might even find some little fault in your husbands. You might even find some fault with your next-door neighbor. But you would not destroy

the institution of matrimony because your husband has a fault, and not one of you would want to destroy community life, as we know it, because you have found fault in your neighbor. You know there was once a dog which dropped an actual bone and jumped into the creek to grab the shadow of that bone. *All the personal and professional faults doctors possess would go with them into a system of communistic medicine if adopted in America.* To place a mantle of governmental authority on a man or woman does not add to his quality of mind and soul.

All humans and all human institutions are mixtures of faults and virtues. The proportion between the two is what makes them good or bad. An institution, even an orphan asylum, with all its virtues, regardless of scientific administration, is not as good a place for a child to grow up in as is a private home. It has taken a long time to learn this. The best of institutions is a poor substitute for a home. Yes, a home, a modest home, if you please, with parental care; a small frame structure whose roof is not burdened by unbearable tax. A home with humble parents whose heads are not bowed by unpayable tax. That institution, surrounded by some playground, makes the best environment for childhood development to be found on earth. This fundamental fact is disregarded almost completely by many of these so-called leaders in child welfare.

The man or woman who makes a substantial contribution toward the rehabilitation of this institution will be doing more for child welfare than all the sociologists on the pay rolls of government.

The clever leaders in many movements which are going on are smart enough to disguise their motives under virtuous and laudable names.

There is nothing new about that. Jesus Christ met that problem. He anticipated that many works would be inaugurated in his virtuous name. He anticipated also that such leaders will appear before him on final judgment and claim the right of admission to the eternal city because of some wonderful work in his name. He also an-

nounced his judgment in advance. "Depart from me, all ye workers of iniquity."

It is important that we examine with care many of these movements, to recognize, if possible, the ones which may work iniquity.

A short while ago we in America, with eagerness and enthusiasm, placed the lives of thousands of our young men and billions of our treasure on the altar of liberty. Longevity was not our goal. We adopted as our slogan, "Make the world safe for democracy."

Don't you think it a bit strange that so soon after such a sacrifice we would be lending encouragement to movements which have as their ultimate objective the destruction, *by degrees*, of the very liberty we fought to preserve?

The leaders in this medical *communistic movement* boldly assert that individualism has failed and should be destroyed, though they fail to define the extent to which they would destroy it. They also fail to point out the particular element in it they would preserve, if any. Those who make such

assertions should be made to define their meaning.

We doctors recognize that the emotions of the public have been stimulated with reference to these medical matters. We also know that the public may yet be frightened into giving up the very things that have made us great—the very things that have made us at times the hope of the world. We also know that your influence, not ours, will determine the answer to the question.

I am stimulated to wonder what the reaction to that would be if it should happen. I have a strong feeling that another emotional reaction will come about after a short while. That another Patrick Henry will arise from some remote section, and again, utter the phrase, "Give me liberty or give me death." I have a feeling also that the sentiment will find response, and when it does the struggle will be on again. It will be a struggle between entrenched bureaucracy of our own making on one hand and on the other, private individuals seeking *aloneness* and liberty.

AN ADDRESS*

BARRY C. SMITH

I SHOULD LIKE, if I may, to devote the few moments at my disposal to a subject which is more or less to the fore these days, whenever a group of medical men gather together, and to ask you to consider briefly the policy and attitude of The Commonwealth Fund toward that subject, in very concrete terms. I refer to the general question of medical economics, to the advocacy in certain quarters of various schemes which may be grouped under the general term "state medicine."

Some years ago there was organized an undertaking, with which you are all more or less familiar, under the auspices of a group known as the Committee on the Costs of Medical Care. There were a number of peculiar aspects to the work of this committee. As a body believed to be devoted to careful, thoroughgoing, impartial research, it attracted the interest of many persons who recognized that the cost of modern medical service falls heavily upon certain classes of people in this country and who favored a study which would ascertain the facts and examine in a constructive and scientifically critical manner various possible remedies. Such men as Dr. West, Secretary of the American Medical Association, accepted membership on the committee in that belief. The committee raised and expended somewhat over a million dollars, securing the greater part of it from eight different philanthropic foundations of which, I am glad to say, The Commonwealth Fund was not one. I have, of course, no authority to speak for any foundation except the one I represent; but I followed somewhat closely the activities of the committee, and I have no hesitation in saying that with two or possibly three exceptions the supporting foundations in my judgment contributed to the work as an impartial,

fact-finding study for reasons precisely similar to those which led Dr. West and other gentlemen of like mind to associate themselves with the committee and later to refuse to sign what, in my judgment, was an absurd majority report published by the committee. The two or three exceptions mentioned were foundations which were frankly and openly favorable to socialized medicine, and it is perhaps a fair inference that they had some hope as to the direction in which the committee's findings might lead.

At any rate, there was never any doubt on the part of The Commonwealth Fund as to what might be expected to result from this report. A great deal of pressure was brought upon the fund over a period of two or three years to make appropriations to the committee's work, and the present speaker became somewhat unpopular in certain quarters because of the fund's refusal. It may interest you to learn that a person closely associated with the work of the committee, when asked early in the history of the committee what he anticipated would be the recommendations finally made, stated unequivocally, "Socialized medicine or health insurance." There is evidence that the study made by the committee was largely one of those research undertakings the results of which are to a considerable degree predetermined. Doubtless, much information of value was gathered; doubtless, also, much attention was devoted to the elaboration of the obvious. Much attention was devoted in one study, for example, to the collection of facts and figures substantiating the fact that persons with incomes of \$5,000 a year spend more for medical care than persons with incomes of \$2,000 a year—so they do on groceries, radios, and clothing; but those facts are fairly obvious and do not require the expenditure of large research funds to prove. On the other hand, despite the drastic recommendations of the final report, the

*Address by Barry C. Smith, General Director of The Commonwealth Fund, at the Medical Institute of the Holston Valley Community Hospital, Kingsport, Tennessee, December 9, 1935.

committee did not sponsor a thoroughgoing study at first hand of the workings of the various forms of socialized medicine in those countries where it has been established.

Now why do I mention all this? Simply because I wish to make clear to you the basis upon which The Commonwealth Fund has interested itself in the building of hospitals, in public health, in medical education, in the provision for postgraduate fellowships for practicing physicians, in such gatherings as this whereby you are enabled to profit by hearing distinguished medical men speak upon topics of their special competence. The Commonwealth Fund is vitally interested in seeing a better quality of medical service rendered, particularly in the smaller towns and rural districts where it is especially needed; it is interested, too, in the community health protection which can be provided by an adequate health department. It is *not* interested in interfering with the practicing physician's prerogatives in caring for the sick, and it even hopes to see the day when the private physician may, through the practice of preventive medicine, make a larger contribution to the prevention of illness than he does today. The fund is perfectly aware that medical service as rendered in the United States is not perfect: that not everybody who needs competent medical services receives it or is able to pay for it. Neither does the fund believe that perfection along these lines is attained, for example, under the English health insurance system, with the workings of which I am reasonably familiar and concerning which I have learned the judgment of many English physicians and laymen of mature judgment. Also, and most emphatically, The Commonwealth Fund does not believe that the solution of such problems, or even the moderate improvement of conditions, is to be found in propaganda, in studies with preconceived objectives.

Rather, the solution lies in an evolutionary process growing out of the detached judgment and interpretation of experience and of intelligent experiment in which the medical profession itself must take a large and important part—indeed the leadership

—if results of value are to accrue. And, finally, the fund does not believe its proper function as a philanthropic endowment is to lend its support to frantic efforts to promote one side or the other in these highly controversial matters. It is content to do its mite in helping the physician to render a better service, to make available such facilities to that end as the Holston Valley Community Hospital provides, and to leave the development of the economic adequacy of medical service to a medical profession which, it has faith, desires to see such development in spite of the irritating advocacies of the ubiquitous propagandist.

In Tennyson's *Idylls of the King* occur the words, "The old order changeth, yielding place to new, and God fulfills himself in many ways." That is a favorite quotation by proponents of changes of all sorts who seem to believe that the new is always to be preferred to the old, just because it is new; and who see in these words of a famous poet both substantiation and a degree perhaps of religious sanction for their ideas. Actually, as I see it, the new is not necessarily better than the old, because of its newness, any more than the old is better than the new, because of its antiquity. I do not believe, and I am sure you do not believe, that the methods by which medical care is provided to our people at the present time are perfect either because of antiquity or tradition, or for any other reason. We all know that the cost of medical care and of many other things, including, one might say, radios, grand pianos, and automobiles, places a much greater burden upon some people than upon others, although there is perhaps less protest about these last-mentioned human needs. It is doubtless true that severe illness may be costly, unforeseen, and difficult to budget for. On the other hand, I do not believe, and I am sure you do not, that there is anything to be gained by rushing headlong into some scheme to distribute medical care through some half-thought-through scheme of socialization which may or may not—more likely the latter—prove either adequate for the patient or fair to the physician. Doubtless the English system of health insurance has advantages; doubtless also it is woefully in-

adequate and a long way from the perfection which some of its advocates in this country seem to believe it possesses.

Nevertheless, I do believe that there is under way today a process of evolution which will eventually bring changes in the ways in which physicians care for their patients. It will be most unfortunate if this change is so hurried by enthusiastic advocates that the result is unsound and inadequate; but I believe the medical profession needs to recognize this danger, to study the

question, and to throw its weight and influence upon the need for careful scientific study and progress rather than, through inaction or thoughtless nonconstructive opposition, to leave the whole question in the hands of partisan advocates who can neither be guided nor controlled.

As for The Commonwealth Fund, it is content to do what it can to promote a better quality of medical care and not take part in propaganda with which it has no proper concern.

SOME PRACTICAL SUGGESTIONS ON THE TUBERCULOSIS PROBLEM*

W. W. HUBBARD, M.D., Nashville

IN 1934, tuberculosis ranked third in the causes of death in Tennessee, and led the list of deaths from communicable diseases. The death rate was 88.4 per 100,000. Using the usual computation of ten living, active cases per death, a conservative estimate of the number of tuberculous individuals would be about 25,000.

Like the poor, whom it affects most, tuberculosis is always with us, and has always been with us, and our problem is not only to care for those already diseased, but to control, as much as possible, continuation into the future. The depression has added more problems, both professional and economic, to the management of this disease. Because of mental worry, poor nourishment, inadequate housing, and exposure to cold, there have been many reactivations, and crowded quarters have increased the menace to the more numerous contacts by long exposure. Though figures are not yet available, it is probable that the incidence of tuberculosis is increasing, and it is likely that the upward curve will persist for some time.

As tuberculosis occurs most frequently among the indigent and lower income groups, and the number of its victims is so large, the disease lends itself readily to plans of so-called "state medicine," and "social security measures." Organized medicine opposes such socialized tendencies, where control is not in the hands of those best suited by training for supervision, i.e., the medical profession. Opposition alone, where no practical substitute is offered, carries little weight. A few suggestions are proposed for the control of tuberculosis, which experience has shown to be of practical value, as an approach to the solution of the problem, and which depend upon the general practitioner.

A plan for the control of tuberculosis consists of closely interrelated units, with a

minimal overlapping of duties. These units are:

1. Hospital, or isolated tuberculosis wards in general hospitals, operated by a county, or group of counties.
2. Mobile case-finding units consisting of a trained clinician and an X-ray technician, to act as consultants to the local physician, and as contact agents for the hospitals.
3. Field nursing service.
4. Welfare agencies.
5. The general practitioner, adequately trained in modern diagnostic and treatment methods.

A close approach to the solution of the problem can be obtained with the use of those units already functioning, and other facilities now in operation. There are many general hospitals throughout the state whose advantages should be made available to the tuberculous, the public health units have field nurses and educational contacts that can be utilized, and there are many welfare agencies for the provision of supplies for the indigent. The State Health Department has been operating a case-finding unit for some years. These units are functioning now, but unfortunately, the number of physicians familiar with modern therapeutic measures is far too few.

For many years there has been agitation for a state tuberculosis hospital. No one questions the advantages of hospital treatment, but the practical value of such an institution is open to considerable discussion. It would seem wise to consider several points before construction is planned.

Hospitalization of the tuberculous should be the problem of the county (or group of counties). Patients should be kept reasonably close to their homes to prevent too much unnecessary travel, to make treatment facilities more accessible, and to maintain closer contact with the family physician. From the financial standpoint, county appropriations to a state hospital, as suggested by some, have already proven un-

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satisfactory in the maintenance plan for the operation of various state hospitals for mental diseases, and it is quite unlikely that the state would be willing to assume any added burden.

It would be physically and financially impossible to hospitalize all of the tuberculous population. There are approximately 14,000 beds in the ninety-nine hospitals of all types operating in the state, and there are probably twice as many active cases of tuberculosis as there are hospital beds. To duplicate this number of beds for tuberculosis alone would require an enormous capital expenditure.

In order to be of practical value, a municipally controlled hospital should operate under the policy of "the greatest good to the greatest number," and that policy depends upon:

1. Hospitalization of open cases only.
2. Short period of hospital stay—a rapid patient turnover is essential.
3. Intensive training of the patient in how to live with his disease, and to protect his contacts.
4. Return to the local physician for continuation of treatment.

With the advent of collapse therapy, a rapid turnover of patients has been made possible, and with the wider application of the various forms of collapse therapy, shorter hospitalization and continuation of treatment at home is entirely practicable. Any misguided attempt to create hospitals for the care of all types of cases, and for the purpose of isolation alone, would mean reverting to the obsolete idea of a medical boardinghouse for incurables, and would defeat the purpose of rendering the greatest service to the greatest number.

It should be kept in mind that the expense of construction and maintenance of hospitals is considerable, and that, in the present state of municipal finances, it is unlikely that such projects will be considered. Since municipally operated hospitals of this type are not in existence, except in the larger counties, there is no reason why a tuberculous ward should not be added to general hospitals already established in various communities. County appropriations to these hospitals for the care of the

indigent would be much less expensive, especially in starting a program of this kind.

Various organizations have, for a long time, carried an educational campaign concerning tuberculosis to the public. It is high time that such educational programs be directed to the other half of the picture, the general practitioner. As soon as he realizes that the disease may be diagnosed early in most cases, and that one need not be a specialist to do so, and as soon as the patient, as well as the physician, realizes that treatment should be instituted as soon as possible after discovery much will have been accomplished. Lawrason Brown says "the most important factor in diagnosis in most cases of pulmonary tuberculosis is keeping the disease in mind."

After a diagnosis has been made, the problem of prevention of spread among contacts and treatment of the individual arises. Collapse of the diseased lung closes an open case, and isolates the lung where segregation of the individual may be impossible. Collapse is becoming more widely recognized as an efficient therapeutic agent, but, unfortunately, many physicians are not familiar with this form of treatment. The general indications of the various methods of collapse should be known to every practitioner, as the majority of cases, at one time or another, are suitable subjects, and those interested should learn the technique of pneumothorax at least, as any program of short, intensive hospitalization depends upon the continuation of refills by the local physician. There are several hospitals in the state where training may be obtained. A word of warning, however. No attempt at any form of collapse therapy should be made without adequate training, as unskilled or careless mistakes may result in serious injury, and a very useful procedure will be given a "black eye," especially in communities where it is new.

As has already been stated, the State Health Department is now operating a case-finding unit, consisting of a tuberculosis specialist and an X-ray technician, who visit various counties at intervals. Any patient will be examined and X-rayed upon the written request of the family physician.

The patient receives the benefit of special examination and X-ray study, and the physician, the aid of consultation with a specialist. This service is of considerable value, particularly in rural communities, and deserves fullest cooperation.

Field nursing service is indispensable where a large part of treatment is to be conducted in the home. Supervision of the physician's orders, instruction in home hygiene, and adoption of regulations most suitable to the surroundings are best emphasized by the nurse, who visits the home regularly. In counties where health units are already functioning, field nursing service is established, and should be used.

Closer cooperation with the health department is to the advantage of both the physician and the department. Their functions are complementary, one dealing with an individual suffering from a disease, the other with a disease in its relation to the community. The health department has educational and publicity features not available to an individual physician, and in a campaign against a widespread, chronic, contagious disease such as tuberculosis, these facilities are needed. In modern medicine, prevention is emphasized, and in an attempt to control tuberculosis, every available agency should be used.

In a general way, it has been suggested that local tuberculosis hospitals, or wards in general hospitals, operated by counties, are better suited for the treatment of tuberculosis than a state hospital, and that with the use of facilities already established, and with the wider application of collapse therapy, a satisfactory beginning in an attack on this disease can be accomplished without the establishment of elaborate, or expensive, organizations. This plan is in operation in several cities, and we wish to cite the practical application of its use in Nashville.

The Nashville General Hospital has an outpatient clinic for the treatment of pulmonary diseases which was established with three ideas in mind:

1. To provide treatment or medical supervision of tuberculous patients who were diagnosed at the hospital and who were put on the waiting list of the Davidson

County Tuberculosis Hospital. At times the waiting list is long, and admission delayed. Marked advancement may occur in the interval.

2. To establish an outpatient service that would require a minimal period of hospitalization, and would provide treatment for patients to whom sanatorium treatment is not available, for one reason or another.
3. To use, in conjunction with the clinic, the field services of only such organizations as were already functioning, and to carry out a plan of treatment that would require little expense, and no new organization, or personnel.

These patients are referred from the medical service usually, either from the hospital, or from the outpatient medical clinic. As soon as a diagnosis is made, the case is reported to the City Health Department. A plan of treatment is then decided upon. If collapse is to be used, the patient is placed in the hospital. Pneumothorax is the most commonly used procedure, and for initiating this form of collapse, the patient is usually kept in the hospital one week, and during his stay receives three or four injections of air. Phrenic nerve interruption usually requires a two or three-day stay, and thoracoplasty a variable length of time. After discharge, he returns to the outpatient clinic for further observation and treatment.

As no ambulance service is available, transportation to and from the clinic is usually dependent upon some relative or friend who has a car. In the pneumothorax cases, as soon as the stage of collapse and condition of the patient permits, he comes on the streetcar, or walks if he lives nearby. This is by no means ideal, but the results have been satisfactory.

General instructions concerning rest, diet and fresh air, and sanitary measures are given, and these orders are supervised and illustrated in detail by the health department nurse sent out by the City Health Department, who visits the patient at regular intervals. The nurse also obtains information about contacts, particularly children.

Most of these patients are, of course, indigent and "on relief." They are then referred to one of the welfare agencies for supplies. Their diet is usually deficient in the protective foods, i. e., eggs, fresh green vegetables, fruits, and milk, but these articles can be obtained by special orders. Drugs, and very few other than a cough preparation and cod liver oil, are used, and these are supplied by the city dispensary.

As you see, only such facilities as were already established have been used—hospital equipment, the health department nurses, and the welfare agencies.

A similar clinic, but wider in its scope, has been in operation at the Vanderbilt University Hospital for several years. A number of the patients are from surrounding counties, a few even from distant parts of the state. A longer period of hospitalization is used, and, after discharge from the hospital, the out-of-town patient is usually placed in a boardinghouse, and returns to the clinic for treatment in an ambulance. As soon as it is felt that his condition is satisfactory, he is allowed to return to his home, and if a local physician, familiar with pneumothorax, is available, the patient is referred to him for continuation of treatment, and return visits to the clinic are for checking up only. If no physician is available, the patient returns to the clinic for treatment.

Both of these clinics are conducted in general hospitals, and require little extra expense for their maintenance. What has been done here can be done in any hospital, and many phases can be done in anyone's office. There are enough agencies already established to make a very satisfactory impression on the tuberculosis situation in the state. All that is needed is correlation of these facilities.

SUMMARY

The incidence of tuberculosis in Tennessee is high, and the depression has made the situation worse.

A centralized state hospital would not adequately provide for the number of active cases already existing.

Tuberculosis wards and clinics in general hospitals, with the use of established

facilities, have demonstrated their practical value in two Nashville hospitals.

Collapse therapy as a field measure is of proven, practical value, and allows a rapid patient turnover in hospitals, closes an open case, and provides the patient with active treatment.

The foundation for the whole plan is the general practitioner.

DISCUSSION

DR. JAMES L. HAMILTON (Chattanooga): Mr. President and Gentlemen: Dr. Hubbard, I think, has brought out a very important question here, as we all know, following the depression when there has been an increase in the death rate in tuberculosis. As he stated, there are approximately 25,000 active cases in the state now, and we also know that each case comes from some other case. It is our duty, therefore, not only to treat the patient, but to educate him to protect those with whom he comes in contact.

The great majority of cases of tuberculosis get the infection in childhood. In some of the large cities, in Chicago for instance, they have a city ordinance providing that where a child is born in a family where there is active tuberculosis, either the child has to be taken away or the patient isolated, which is a very good thing. I believe there is some such law in Tennessee, but so far as I know it is not carried out. The main thing in preventing tuberculosis is the protection of the child. It is fairly rare for children to have tuberculosis in families where there is no tuberculosis in either parent.

The doctor brings up the question of state sanatoria, which I do not think, as he says, is practical. The main thing in treating tuberculosis is to keep the patient content, and that is fairly hard to do away from the family and away from friends. Moreover, they could not possibly take care of all the cases; they would have a very rapid turnover. The State of Georgia experiences the same thing. They keep the patients from six to eight months. As he says, the pneumothorax cases would just be well started in six to eight months. Unless there were some stations over the state to take care of them, they could not be cared for. We are close to Georgia, and we get a lot of that. The sanatorium is at Alto, 150 miles from Chattanooga, and it is impossible for them to go back for refills.

The doctor made one statement that left the impression with me that the diagnosis of tuberculosis is comparatively easy. Well, I would like to disagree with him, because I do not know of anything that is any more difficult in diagnosing than early tuberculosis.

Fellows reported some work he did on the 13,000 employees of the Metropolitan Life Insurance Company. He picked up 141 active cases, fifty-

eight per cent of them showing no symptoms at all, and about thirty-five per cent had no physical findings. It is not unusual to see deep-seated lesions that give no rales and no physical findings at all, and X-ray in those cases is the most valuable aid in diagnosis.

As he has stated, collapse therapy is not only a good therapeutic measure, but it is also a good public health measure, because it renders a lot of open cases closed. It is unfortunate that the four or five larger counties have provisions to take care of tuberculosis and the smaller counties cannot take care of these cases. It sounds more logical, as he says, for two or three counties to get together and form a group, because I hardly think the smaller hospitals in the smaller counties could take care of them unless the county paid them; it is a burden that they could not shoulder.

The doctor has given a very timely paper. I have enjoyed it. He has brought out some very practical points, and I think it is very worth while, because there is always an increase following economic depressions.

DR. W. W. HUBBARD (closing): I am sorry I misled Dr. Hamilton into believing I thought the diagnosis of tuberculosis was easy. I do not think so at all. I do think we have facilities that can make it a lot easier. This case-finding unit that the Public Health Department has is of a great deal of value, because they do a great deal of X-ray work, they have a trained clinician who is more or less of a specialist along that line, and he can be of considerable help both from the standpoint of examination and from the standpoint of X-ray. I think we ought to look for tuberculosis more than we have been looking for it, though.

In the clinics we have here, we see far too many people come in with far-advanced tuberculosis.

If we could get them earlier, collapse measures would be of considerable more value to them.

This case-finding unit, as perhaps most of you know, travels around over the country. They have one now; I think formerly there were two. They examine and X-ray any patient on the written request of any physician. They give a written diagnosis, a written statement of the conditions they find, to the family physician, with the recommendation that the patient go back to him for interpretation of the findings, and they tell the patient nothing. That is, of course, as it should be.

For a field measure, I think pneumothorax as a form of collapse therapy can be used very easily. We have practically proven that to our own satisfaction here in Nashville. In the clinics, we have found that a good many of the limitations that we thought were limitations formerly for pneumothorax, or other forms of collapse, have been considerably widened. It is a measure that helps not only from a public health standpoint, but from the standpoint of the individual patient.

As to the county hospitals, to begin with, I believe that some of the smaller counties can establish two or three beds and use them as we do in the City Hospital—put a patient in for ten days or two weeks, let him go home, and then come back for refills or for whatever treatment he is under, until we can make some more satisfactory survey of the situation and find out just what is going to be needed. A state hospital, though, will not answer the question; there are too many patients, it would be impossible to provide enough beds for them, and so far there is no way of selecting the patients. It would be impractical, of course, to take all types of patients. It would be impossible to do very much for the old chronic cases. In beginning any campaign of this sort, though, only the open cases should be considered.

HYPERINSULINISM AND EPILEPSY*

C. R. THOMAS, A.B., M.D., Chattanooga

IN 1924 SEALE HARRIS¹ called our attention to the possibility of an over-function of the pancreas with an increased secretion of insulin and resultant hypoglycemia. This condition he termed hyperinsulinism. It is the antithesis of diabetes and bears the same relation to it that hyperthyroidism bears to myxedema and cretinism.

The cardinal symptoms of hyperinsulinism are hunger, weakness, nervous manifestations, and hypoglycemia. The nervous and mental symptoms are exceedingly variable and interesting and may manifest themselves as anxiety neuroses,² nervous indigestion, tachycardia,³ hysteria,⁴ certain types of psychoses,⁵ mental lapses and convulsions,⁶ and attacks resembling true epilepsy.⁷ Harris⁸ is of the opinion that hyperinsulinism is as frequent as diabetes and classifies it clinically into three types according to its severity.

In 1927 the first instance of recurring attacks of unconsciousness and convulsions which was proven to be due to hyperinsulinism was reported by Allan⁹ and Wilder.¹⁰ This case was due to carcinoma involving the islands of the pancreas. In 1928 Allan¹¹ reported two additional cases of hyperinsulinism with convulsions. Cases were also reported by Thalheimer and Murphy¹² and Finney and Finney.¹³ In 1929 Howland, Campbell, Maltby, and Robinson¹⁴ reported the first cure of a case of hyperinsulinism and epilepsy by removing an adenoma of the pancreas. Neilsen and Eggleson¹⁵ in 1930 reported three cases of dysinsulinism with convulsions and their control by diet. Carr, Parker, and others¹⁶ reported a case of a boy eighteen years old whose convulsions were cured by the removal of an adenoma of the pancreas. Numerous other cases were reported, and in 1932 Harris¹⁷ reviewed the reported American cases and estimated approxi-

mately twenty-five per cent had been cured by operation, fifty per cent were controlled by diet, fifteen per cent were unimproved, and ten per cent were dead. In February, 1933, Harris¹⁸ reported three cases of epilepsy in association with hyperinsulinism which had been cured by partial resection of the body and tail of the pancreas. His talk¹⁹ before the Southern Medical Meeting in 1932 made me realize that I had seen such cases and that I had one under observation at that time. This case and one other are the ones I wish to report today. Both of them seem to me to meet the requirements of a diagnosis of hyperinsulinism as laid down by Harris,²⁰ and both of them have had repeated epileptic convulsions. Furthermore, both have responded beautifully to treatment directed towards control of their hyperinsulinism.

Epileptic seizures and hypoglycemia being the principal features of the cases under discussion, a few words regarding them seem indicated. Bates Block²¹ quotes Leftwich as listing eighty diseases in which convulsions occur. Practically all of us have seen convulsions in association with encephalitis, meningitis, head injuries, brain tumors, multiple sclerosis, syphilis, and tuberculosis.

Tedstrom²² in the table on the next page summarizes the causes of spontaneous hypoglycemia.

Special reference should be made to the work of Cross and Blackford²³ on toxic hepatitis and the report of a fatal case of hypoglycemia following arsphenamine. Anderson²⁴ reports a fatal case due to a tumor of the adrenal. Cushing²⁵ has shown the influence of the pituitary gland on sugar metabolism.

Cannon's²⁶ explanation as to the manner in which hypoglycemia causes convulsions is that the convulsions are a part of an automatic defense mechanism which comes into play when hypoglycemia occurs so that the sugar level may be raised by releasing

*Read before the Tennessee State Medical Association, Nashville, April 9, 10, 11, 1935.

TABLE I

SPONTANEOUS HYPOGLYCEMIA	(A) Glandular	Pancreatic	{ Hyperinsulinism or Dysinsulinism	{ Adenoma Carcinoma Functional or Neurogenic Hyperplasia and Hypertrophy of islets		
				{ Hypoglycemia of late diabetes Alimentary hypoglycemia		
		Adrenals Pituitary Thyroid Parathyroids	{	{ Toxic hepatitis Cirrhosis of liver Acute yellow atrophy Carcinoma		
		Hepatic				
		Ovary Pluriglandular				
	(B) Other Causes	{	{ Renal diabetes Lactation and pregnancy Toxemias of pregnancy Vomiting of childhood and convulsions Excessive fatigue or physical exhaustion Scleroderma Muscular dystrophy Terminal hypoglycemia Fasting Status lymphaticus Bronchial asthma			

the glycogen stored in the muscle after the sympathico-suprarenal system has exhausted the glycogen stored in the liver. When the blood sugar level falls it is met by an increased activity of the suprarenals and an overdose of adrenin is thrown into the blood stream. It is to this hypersuprarenalism that he attributes the tachycardia, sweating, and some of the nervous symptoms. The symptoms resulting from an overdose of adrenalin are rather similar to those caused by an overdose of insulin. Because of this automatic regulation of the blood sugar most of the convulsions due to hypoglycemia recover spontaneously.

In addition to the symptoms and hypoglycemia it is necessary that a sugar tolerance test be made. It, like the fasting blood sugar, should be made more than once and at several days interval. The response to the ingestion of 100 grams glucose is fairly constant in hyperinsulinism and varies only according to the severity of the condition. The curve in a mild case is shown in comparison with a normal.



A represents blood sugar readings after ingestion of 100 grams of glucose in a case of mild hyperinsulinism.

B represents blood sugar readings after ingestion of 100 grams of glucose in a normal individual.

Case 1. Mrs. M. B. White, housewife, age forty. First seen in September, 1932. Her chief complaint was "convulsions." Her family history was practically negative. She was one of a large family, and there was no history of epilepsy, migraine, diabetes, or allergic conditions. Her past history revealed the usual diseases of child-

hood without any complications. She had never had any serious illnesses, injuries, or operations. Her early menstrual life was quite normal. She has had three normal pregnancies and no miscarriages. Children and husband are normal in every way.

Present illness began about six months before I saw her, with a period which was normal in every way except that it was three days late, and that she had "weak spells" two or three times a day but never was unconscious. She was excessively hungry just before the "spell." As the symptoms lasted only one day and entirely disappeared when period started, she did not think much about it until the "weak spells and hunger" returned the day before her next period was due. She felt very depressed and took a Coca-Cola to "buck her up." She was extremely pleased with the effect and states that she felt "happy and energetic" within a very few minutes. She then began taking two or three Coca-Colas a day, and to her delight she passed through the next period without any "hunger or weak spells." She felt that her troubles were over until the period just preceding the last one, when the symptoms returned with increased intensity. The night just preceding the onset of her period, she had a definite convulsion in which the classical signs of an epileptiform attack were present, according to the account of her husband. For four or five days after this attack she seemed quite well. On the sixth day she took rather a long automobile ride and had very little to eat and no Coca-Cola, and on reaching home in the late afternoon she had another convulsion which was in every way similar to the first one. While she did not have any more major attacks for a week or two, she was hungry most of the time and had several weak spells. Just preceding her last period, which was two weeks before I saw her, she had a very severe convulsion the day before her period started and one on each of the two succeeding days. All of the convulsions have occurred late at night except the one that followed a long day's drive without much food.

Physical examination showed a well-nourished white woman just about her ideal

weight and who appeared somewhat younger than her stated age. The general physical examination was negative for any source of infection in her head, nose, throat, and teeth. Neck showed no enlarged glands and thyroid was negative. Heart, lungs, and abdomen were normal. Uterus was a little enlarged, soft, and slightly retroverted. There were a few hemorrhoidal tags. Neurological examination was entirely negative. Urine examinations were repeatedly negative, both single and twenty-four-hour specimens. RBC 4,200,000. WBC 6,800. Hemoglobin eighty-five per cent. Differential normal. Wassermann and Kahn negative. BMR plus four. X-ray studies of skull were negative. A spinal puncture revealed a normal fluid without any increased tension.

A diagnosis of idiopathic epilepsy was made, and patient was put on a strict ketogenic diet and was given small doses (one grain) of luminal daily. She adhered rigidly to the diet for the first month of treatment with the most gratifying results and passed through her period without any attacks. By this time I had heard the discussion on hyperinsulinism and decided to make blood sugar studies to determine whether or not my patient was a case of this type. The first fasting test showed practically a normal reading, eighty milligrams per 100 cc. of blood. The ketogenic diet and luminal were stopped, and at the end of a week another blood sugar determination was made. This was the morning of the day she was due to start menstruating, and she stated that she had been extremely hungry for the past twenty-four hours. The reading at this time was fifty milligrams (8:00 A.M.). Five hours later another determination was made, still on fasting stomach, and a reading of forty milligrams was obtained. Before patient was able to get her lunch she had a typical convulsion, which lasted about twenty minutes and was followed by a deep sleep lasting about two hours. She complained of the usual muscle soreness for the balance of the day.

As Harris had already shown that luminal would cause an increase in blood sugar, we decided to treat the patient without the use of luminal. She was accordingly continued

on a ketogenic diet and seemed to get along just as well as when taking luminal. After some months she became tired of following her diet and began to eat candy, ice cream, hot breads, and to increase the carbohydrates little by little until she was again on a high carbohydrate diet. She came to see me one day and said that she was cured, that she had eaten what she wanted and had passed through two periods without attacks and no longer had weak spells or hunger.

The cure was of short duration, for in less than a month she had a severe convulsion on the second day of her period. Blood sugar studies following this attack showed a typical hyperinsulinism curve following the ingestion of 100 grams of dextrose. It was decided to make blood sugar tests at weekly intervals while she was on practically a normal diet. These tests for the first and second weeks following the period were at the low limit of normal (seventy-five to eighty milligrams.) The first of the week before her period started, blood sugar was about sixty milligrams. This fell to fifty milligrams two days before her period, and the symptoms of weakness and hunger reappeared. The beginning of the second menstrual day her blood sugar fell to forty-five milligrams and was followed by a convulsion.

We then tried out a plan which has worked admirably and which for the most part is still being followed. The ten days before menstruation and the four days of the period, the patient adheres rigidly to a diet low in carbohydrates and high in fats. This lacks a little of being a typical ketogenic diet²⁷ and is sufficient to maintain body weight. The balance of the month she takes more liberty with her diet, but avoids soft drinks with syrup, candies, and pastries. She refuses to be experimented with any further and says she is doing very well.

Case No. 2. Mrs. M. S. S. White, age nineteen, married. July, 1934. Chief complaint convulsions and weak spells.

Past history: Had usual diseases of childhood. Parasites: malaria for several summers, nine to twelve years. Rather frequent tonsillitis until past four years. "Flu"

mild, several times. Rarely has colds. General health good. Has always been constipated. No other gastrointestinal disturbance. Genitourinary symptoms are absent. Menses are normal. Was married at sixteen. Has two children living and well. Normal pregnancies and labor. Patient said to have had head injury when a child.

Present illness: When she was about twelve years of age she began having attacks that were apparently petit mal, and were associated with excessive hunger. These attacks increased in frequency. At fifteen she had her first convulsion as she was leaving school in the late afternoon. She was not completely unconscious. Was not very well for two or three days afterwards. During the following year she had occasional "weak spells" but no convulsions. Following her marriage (at sixteen) and immediate pregnancy she seemed much improved, but five months after the birth of her child she had a second convulsion which came on while she was asleep. Two or three months later she had her third attack. From the description given by the family the attacks seem to be typical epileptic convulsions. About this time her second pregnancy started and in the early part of it she seemed quite well. In the last third she began having "unconscious spells" without convulsions. These would occur about once a week and were of very short duration. Since birth of child she has been having three to four convulsive seizures a week in addition to "weak spells" and headaches. To control these attacks she has been taking large doses of luminal which she says reduces her hunger and makes her sleepy. For some months she drank a lot of Coca-Colas and ate a lot of candy, and she thought at first that it helped her. She feels that she is more apt to have attacks when constipated, so she takes frequent cathartics. In several attacks she has fallen and hurt herself. Most of the convulsions occur just before meals or at night. Headaches seem to be occurring at times unassociated with "attacks."

Physical examination is essentially negative except patient seems very sluggish mentally; is definitely underweight, and appears quite pale and her blood pressure is low

(88 60). Neurological examination was negative except that there seemed to be a positive Babinski on the left and speech was rather deliberate.

Laboratory reports were as follows: RBC 3,600,000. WBC 7,500. Hemoglobin sixty-six per cent. Differential: polynuclears sixty-one per cent. Mononuclears five. Lymphocytes thirty-three per cent. Eosinophiles one. Kolmer and Kahn negative. Urine and stool negative. Patient referred to neurological surgeon, who made air studies of skull which were negative. Spinal fluid was negative. Blood sugar: fasting fifty-three milligrams, and repeated next day sixty milligrams. BMR: minus two. Sugar tolerance with one hundred grams glucose gave: fasting, fifty-five milligrams; one hour, seventy-two milligrams; two hours, seventy-eight milligrams; three hours, sixty-four milligrams; four hours, fifty-two milligrams; five hours, fifty milligrams; six hours, fifty milligrams.

Suggestions were made as to treatment, and patient was not seen again until a month later when she returned stating that she felt better when she took large doses of luminal (three grains a day) than she did when she tried to follow diet. Her objection to luminal was that it made her have queer dreams and that she could not concentrate very well. She was therefore willing to follow directions. She was put on a high fat, low carbohydrate diet with intermediate feedings of orange juice, tomato juice, or milk. She was also given reduced iron with copper sulphate. She followed diet rigidly and went for five weeks without any convulsions or weak spells. She gained six pounds in weight, and blood count was greatly improved. The fifth week of treatment she resumed menstruation and had two mild convulsions the first day. She became frightened, and on her own initiative took one-half grain luminal morning and night and passed through the balance of the period without any trouble. She then stopped the luminal and continued with her diet. In the following three months she had only two convulsions and both were in association with menses. She has had only one mild attack in the past three months, and that was eight weeks ago and was at

the time of period. She is more careful about diet just before periods, and, in spite of advice to the contrary, she usually takes one-half grain of luminal each night of her period. She has gained in weight and is about her calculated ideal. Her blood count is practically normal. RBC 4,400,000. WBC 7,200. Hemoglobin eighty-five per cent. Blood pressure 110/86.

Harris has shown that bromides will cause an increase in blood sugar, and Tedstrom²⁸ has had similar results with phenobarbital. There are drawbacks to their prolonged use. Pituitrin produces such a slight increase in blood sugar that it is valueless in treatment. Ephedrin does not produce any change. Adrenalin produces a very definite rise in the blood sugar and in conjunction with intravenous glucose constitutes the main treatment of an acute attack. A high fat, low carbohydrate diet with intermediate feedings of fruit juice or milk has proven the best method of treatment for the cases in which operation is not indicated.

CONCLUSIONS

1. That there is a definite symptom complex which is best described as hyperinsulinism.
2. That hyperinsulinism and epilepsy are frequently associated.
3. That all epileptics should have blood sugar studies.
4. That a high fat, low carbohydrate diet with intermediate feedings is the best method of treatment for most cases of hyperinsulinism.

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DISCUSSION

DR. J. S. READ (Nashville): I am sure we are all very grateful to Dr. Thomas for his excellent and timely paper. My experience with this condition is very limited. As a matter of fact, it consists of one case which I do believe will fit in his group. This was in a boy nineteen years old, a paper carrier, who had to get up at three o'clock in the morning and usually got home about five. Several mornings just about five o'clock he would have a convulsion, and his mother would call me frantically. I would get there, look him over, and I thought he had a true epilepsy. About this time I began reading a little bit about hyperinsulinism and thought that I might have such a case in this boy.

One morning she called again just about five o'clock, and I got some blood for a blood sugar. Just as his attack was about over and he was beginning to get a little rational, I obtained the blood and the blood sugar was sixty milligrams. I put him on a high fat diet with interval feedings and he remained here for about five weeks without any more convulsions. He moved away from town, and I have not been able to follow him any more, nor was I able to do a glucose tolerance curve on him. I was just able to get the one blood sugar.

I thoroughly agree with Dr. Thomas that these epileptiform seizures that are obscure certainly deserve a blood sugar study.

I would like to ask Dr. Thomas if he thinks that some other endocrines may have played a part in the two cases that he reported.

DR. ROBERT C. DERIVAUX (Nashville): Dr. Thomas has presented two instances of a condition that was first called to our attention by one of our Southern colleagues, Dr. Seale Harris of Birmingham, and a condition which, as we begin to look for it perhaps a little more carefully, is making itself manifest with almost startling frequency.

I think all of us who have taken anything more than a passing interest in disorders of metabolism, and have had our attention awakened to hypoglycemia and the various symptoms which may manifest such a condition, have found in increasing numbers cases which tentatively at least we may so classify, and with further study and the elimination of other possible factors to explain what has taken place, we are practically compelled to classify as belonging in the category described by Dr. Harris.

Reproduction experimentally of the symptom complex that characterizes hypoglycemia is relatively easy. You will recall that the work done by Mann and his associates in complete hepatectomized animals reproduces hypoglycemia in its ultimate severity, and that the dog, now deprived of a liver, totally incapable of standing on his feet, moribund, is at once put up, walks around the laboratory, wags his tail, manifests a complete resumption of the ordinary activities of life on the injection intravenously of a moderate amount of glucose, and maintains that status for a short period of time before death finally supervenes. Death in the hepatectomized animal is then a death from hypoglycemia.

The same thing can be brought about in other ways. Last week I had in my office an unusually well-informed dairyman who brought to my attention some facts, new to me at least, about hypoglycemia in lactating cows. Dr. Thomas' chart mentioned lactation as among the causes of idiopathic hypoglycemia, and my informant told me of the occurrence of hypoglycemia in his cows and of the treatment that the veterinarians had now learned to use, not of the insufflation of the udder with air through a cannula, but by the injection intravenously preferably of calcium gluconate with complete control of the situation immediately.

Hypoglycemia has been seen in lactating goats. It can be produced almost at will in lactating goats by overmilking.

As far as the epileptiform seizures that present

themselves clinically under one guise or another are concerned, I think Dr. Thomas is exactly right in emphasizing the necessity, as did also Dr. Read, at least of giving attention to the disorder of metabolism before arriving at a diagnosis. The cases in which a good result is obtainable can usually be controlled without much difficulty by the apparently paradoxical method of putting the patient on a high fat, low carbohydrate, relatively at least, diet. Treatment of the attack, as Dr. Thomas and Dr. Read both stated, is the administration of glucose.

DR. CHARLES ROBERTS THOMAS (closing): I did not attempt to go into any of the nervous symptoms of hypoglycemia or hyperinsulinism except epilepsy. It is undoubtedly true that other glands of internal secretion probably do play a part.

The doctor who just spoke would be interested in some very interesting work that has been done in one of the Louisiana state hospitals for mental deficient, in which Dr. Powell has found in a great many of the children, who are high-grade morons, very definitely low blood sugars, and on proper treatment they have shown marked improvement in their intelligence tests.

I am not presenting a cure for epilepsy nor do I think that hyperinsulinism is the sole cause of epilepsy. It may be just a coincidence, there are probably other factors, but it is certainly one that we should bear in mind, because there are so many of these patients that we are able to help with very little difficulty.

RESULTS IN X-RAY TREATMENT OF CERTAIN DISEASES OF THE EYE*

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BEFORE THE yawning hour, permit me to express to you my sincere appreciation of the honor you have conferred in asking me to appear on this program.

I have always believed that there is much truth and wisdom in the saying, "Explanations, excuses, apologies, and alibis count only for that which they do not alter." Yet, I am opening my remarks with words of somewhat that nature.

I have no slides to show you. That may be regarded as a grave defect by some and a welcome change by others. Not long ago I listened to a paper illustrated by such a profusion of slides and punctuated by such verbosity of slide announcements that ere long, through the lethargic, smoky haze of the darkened room, I was at a loss to know whether I was in scientific session or at a baseball game with its "Slide, Kelly, slide."

One of the learned essayists at the recent meeting of radiologists in Memphis was a consummate slide artist. Such an array of graphs, straight lines, curved lines, ordinates, and abscissas did he present that I was reminded of a discussion between Einstein and Mae West. Einstein still believes that Euclid was right in defining a straight line as the shortest distance between two points, provided, if, and only, that the line is not too long, in which case it finally begins to turn back on itself, like a rabbit backtracking on the hounds, and reaches at last its point of origin, with prestige enhanced by having become one of the bounding lines of Einstein's curved universe. While Mae will not argue with him about straight lines, she does score heavily in accurately and vividly defining a curved line as, not the shortest nor yet the longest, but the most beautiful distance between two points. Much more

of this and you will think there is not much more to this.

X-rays and radium rays have as one of their most useful properties the ability to dislodge electrons from atoms, with the consequent formation of ions. The ion in simplest form is a particle of atomic size and weight, which has lost one or more electrons, leaving it positively charged, or that has gained one or more electrons, rendering it negatively charged. These positive and negative ions attract each other and are ready to form new compounds. Incidentally, herein lies the basis of chemical affinity.

These rays, then, are able to bring about electronic, ionic, atomic, and molecular changes, thus laying the foundation for chemical changes in living tissue.

By virtue of the penetrating properties, the rays are able to carry these chemical changes to any part of the body where they may be needed. These two factors constitute the major part of the foundation upon which rests the basis of radiation therapy. There are, however, certain other factors that are to be considered.

First among these is the varying susceptibility of the different tissues of the body. The basis for these variations is to be found in the varying degrees of chemical stability of the different tissues. It has been established that body tissues vary in susceptibility in the following order: lymphocytes, ovaries, testes, skin, muscle, bone, nerve. The second factor guiding radiation is the fact that, while tissues vary greatly in tolerance, there is a point beyond which tolerance ceases for any and all tissues. No area of diseased tissue should be given more radiation than that from which the surrounding or overlying normal tissue can recover. To kill an area of diseased tissue and at the same time to mortally wound some vital organ in the immediate vicinity could hardly be regarded as curing the patient.

*Read before the Tennessee Academy of Ophthalmology and Otolaryngology, Nashville, April 8, 1935.

Is the eye so susceptible to radiation that it will not tolerate doses of sufficient strength to be curative in any of the diseases in which it would otherwise be indicated? Is the eye very sensitive to radiation or is it relatively quite resistant? Is it ever safe to direct a quite intensive beam of X-rays straight into the wide-open eye?

In 1931-2-3 Dr. Arthur Desjardins made a most thorough study of the effects of X-rays on every tissue, every organ, every gland, and every region of the body. Hair, skin, bone, brain, nerves, eye, ear, tongue, nose, larynx, heart, lungs, kidneys, reproductive organs, stomach, intestines, spleen, pancreas, liver, lymph, and blood were all investigated. His report covering hundreds of pages was published in the various issues of the *Journal of the American Roentgen Ray Society* for the years 1932 and 1933.

In that part of his report covering the eye, he reaches the conclusion that, except before birth and shortly thereafter, the normal eye is quite resistant to radiation, and further that a number of eye diseases may be treated by X-rays or radium rays without danger to the eye itself.

Of the several parts of the eye, the cilia are the most sensitive, but not more so than hair follicles in any other part of body. The eyelid and conjunctiva are about equally resistant. The cornea, iris, lens, and vitreous are still more resistant, while the retina, being nerve tissue, is most resistant of all.

My own experience of some twenty-five years has been entirely in accord with these conclusions.

As an illustration of marked eye tolerance may be mentioned the case of Mrs. J. L. P., referred by Dr. Rychener, September 25, 1931. This patient received a total of twenty-two half-hour treatments, high voltage, copper filtration. Half of the treatments were given straight through the front of the eye and half through the left temple. This represents a total dosage of about 3000r. 1500r was given during the first month of treatment, and 1500r spread out over the year 1932. I examined this patient five weeks ago. So far as I could see, lids, cilia, conjunctiva, iris, and lens were perfectly normal. I have treated many serious eye cases with approximately this dosage,

and in none of them have I noted any damaging effect to normal structures.

During the past five years, I have treated one or more cases of the following diseases: Blastomycosis of both upper and lower lids, sarcomata, blepharitis, epitheliomata of lids, hemangioma, entropion, erysipelas of lids, chronic infection of merbomean glands, iritis, vernal conjunctivitis, massive granuloma of ocular surface of whole upper lid, tuberculosis, choroiditis, epitheliomata of eye beginning at the nimbus, and trachoma.

All of these were referred cases, and many of them had refused to respond to other forms of treatment.

I can report only in general on most of these cases, giving detail in some of the more interesting.

Of epitheliomata of the lids, there were about forty cases. All responded favorably, and I have reason to believe are well today. A smooth silver plate curved to fit the eye is slipped under the lids to protect the conjunctiva when large doses are required. Owing to the importance of tissue conservation and particularly the conservation of the tear ducts, I believe it is quite generally conceded that radiation is the method of choice in the treatment of cancer of this region.

Epithelioma originating on the anterior surface of the eye itself is sufficiently rare and sufficiently difficult of diagnosis to warrant special consideration. Beginning as it does at the nimbus and usually on an arc joining the inner and outer canthus, it gradually develops, without subjective symptoms, a circular area of raised and thickened tissue yellowish gray in color, and nourished by a network of congested blood vessels coming into it from all directions except that of the cornea.

Five such cases have been treated with low voltage X-rays given between the open lids. Four are well from one to four years, while the fifth is recent and still under treatment.

Three cases of blastomycosis of the lids have been treated. All responded rapidly and healed completely in from three to five weeks. Tissue destruction, which is often extensive in this disease, was promptly arrested.

One case of a fiery red granuloma about the size of a small French pea, on the margin of the lower lid, deserves mention. This case referred by Dr. Ellett had been treated by him surgically twice. And twice had this growth been removed surgically by the oculist who antedated Dr. Ellett in the case. In spite of this history, I removed it by fulguration. Within three weeks the growth was back again as fiery red as ever. At this stage I gave it one suberythema dose of X-rays. Within two weeks the little tumor had entirely disappeared. Now after three years there has been no recurrence of the growth.

A case of very massive trachomalike granulations covering the whole undersurface of the right upper lid in a white girl of eight was referred by Dr. James Stanford. This condition proved very susceptible to radiation. Four X-rays treatments at weekly intervals brought about complete resolution. Four months later, I examined this child and could see no departure from the normal. She has remained well.

I have treated four or five cases of iritis with marked relief of pain and apparently hastened recovery. But recovery is the rule anyway, and who can say whether or not it was hastened?

I know of no disease or condition much more painful, distressing, irritating, nagging, and exasperating than entropion. And all of these adjectives and others also apply equally well to both patient and doctor during the operation of trying to remove these diseased, pallid, shrunken, diminutive, turned, curved, curled, and distorted lashes by means of electrolysis, which would certainly seem to be the method of choice. Such it is in some cases. In others it is practically impossible of execution. In electrolysis a tiny gold needle must thread the hair follicles. The follicle on the margin of a diseased lid is almost impossible to see. When one thinks the entrance to the follicle is located and makes gentle pressure with the point of the needle, the lid slips away over the smooth surface of an irritated eye. A series of winks, blinks, and squints follow in rapid succession. Tears flood the field and by light refraction make

the follicle appear to be where it is not. After a few trials of this sort, patience on the part of both the operator and operatee ceases to be a virtue.

The better procedure in difficult cases is to pluck all of the turned-in lashes in the diseased and distorted lids—this means practically all of the lashes—slip into the eye the silver shield mentioned above, and proceed to give in four or five minutes an epilation dose of X-rays. This will prevent regrowth of the lashes from six weeks to three months, or possibly permanently. If the lashes return, the treatment can safely be repeated at intervals until epilation is permanent. This procedure is easy to carry out and is not in the least painful to the patient.

Many cases of erysipelas of the face involving the eyes have been treated. The required dose is comparatively small and perfectly safe. So rapidly does erysipelas respond to radiation that X-ray treatment has come to be regarded as practically a specific.

A keloid extending from the inner canthus upward and outward just under the eyebrow was one and one-half inches long, one-fourth inch wide, raised, inelastic, and deep red in color. The young lady was referred for treatment by the late Dr. Haskell. The result of X-ray treatment was all that could be desired. The scar is not at all noticeable now and can be seen only on close inspection. Neither eyelashes nor eyebrow was injured by treatment.

One case of hemangioma of nearly the whole of the conjunctiva of one eye in a child of four years of age referred by Dr. Ralph Rychener has undergone rather remarkable improvement. When first seen, the involved area was red to purplish in color, and there were many redundant folds of the conjunctiva swollen and tending to roll out between the lids when the eye was nearly closed. Now after only four bi-monthly treatments the eye is approaching normal appearance. The remains of the dilated veins and conjunctival folds can be brought into view, however, by turning the eye to the right or left. This case is still under treatment.

Two cases of postoperative sarcoma of

the eyeball were referred by Dr. Ellett. A third case referred by Dr. Anthony was clinically sarcoma of the orbit involving the globe. The eye was fixed, painful, and fiery red. Improvement and relief were so prompt under deep therapy that it was decided to see if the eye could be saved. It was, and today vision is perfect, and the eye entirely normal in appearance. Two years have elapsed since the last treatment.

In spite of the results reported by Kruglov in trachoma treated by radiation, fifteen cures out of twenty-five cases, none of the three or four cases treated by me have gotten satisfactory results.

Two cases of vernal conjunctivitis have improved rapidly following treatment. Two others have not been benefited.

In closing, I wish to refer once more to the case mentioned above as an example of eye tolerance to radiation therapy.

This was a case of retrobulbar tumor in a woman of about thirty-five, a government

employee, referred by Dr. Rychener. The symptoms were exophthalmos, complete loss of vision, bulging of left temple, dizziness, and other pressure symptoms. At operation by Dr. Semmes, the tumor was approached by a temporal incision. It was impossible to remove the whole tumor. Tissue was taken and the wound closed. Dr. Leak's pathological findings were lymphosarcoma. X-ray treatment was begun about ten days after operation. Improvement was soon noted, and about a month after treatment was begun the patient was able to resume her work. Since that time there has been practically no loss from illness.

Late in 1933, Dr. Rychener reported vision 20/20. Now, nearly four years since treatment was begun and two and one-half years since the last treatment was given, there is nothing about this patient to suggest the serious nature of her former trouble, except a somewhat sunken left temple.

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H. H. SHOULDERS, M.D., Editor and Secretary

JANUARY, 1936

EDITORIAL

THE NEW YEAR

A new year is just beginning. Some approach it with high hopes, others with serious misgivings.

It is noted that in general people are less inclined to make predictions as to what is going to happen in 1936 than is usually the case. The facts are we are less in position to predict. There is one prediction, however, we will venture to make. It is this: that if an invasion on medicine is attempted by American communists a more united opposition will be presented than has ever been the case before.

Medicine was threatened in the year just ended, but the resistance to the invasion was effective in large measure.

We are not yet ready to admit that all the faults which exist in medical practice can be cured by bureaucrats.

COMMONWEALTH FUND

There appears on another page of this issue of the JOURNAL an address by Mr. Barry Smith, director of the Commonwealth Fund.

This statement is of real importance to the profession. In the first place, it is made by a person in authority. In the second place, it portrays the policies which have been formulated by the trustees of a very large fund.

The executives of this fund were charged with the duty of spending it for the benefit of humanity. They have sought to benefit

humanity by improving the medical care that is received by humanity. They have sought to improve medical care in two ways. First, by improving the educational accomplishments of doctors engaged in practice, with particular emphasis on those located in smaller towns, and, secondly, by improving the facilities for rendering care by building and equipping hospitals in locations where they are needed.

This group of people has not sought to upset the whole system of medical practice in America and substitute for that a scheme imported from some European country. They have sought to improve practice in the system that exists. In our opinion, they are deserving of high commendation.

THE VIRTUE OF CAUTION

Practicing physicians are often accused of being nonprogressive. This is not true. In our opinion, practitioners of medicine, as a whole, make progress with caution and prudence. After all, this is the most permanent form of progress. It means sound progress. It means safe progress. It does not jeopardize the life of the people.

Recently there has come to light an experience which demonstrates the wisdom of cautious progress. It is to the effect that twelve children developed poliomyelitis following the administration of immunizing treatment and six had died at the time the report was written.

This is not written to condemn research nor to condemn experimentation. It does serve to emphasize the wisdom of caution and prudence on the part of those who have the responsibility of taking care of the sick people of the country.

THE HIGH SCHOOL DEBATE ON STATE MEDICINE

So many requests have come to the office for literature on the subject of state medicine which is to be debated by high school students in the future we have decided to print in this issue of the JOURNAL an address on the subject made by the secretary-editor a little over a year ago.

Doctors who are called upon for advice and for literature may find this of some value.

THE AMERICAN FOUNDATION STUDIES IN GOVERNMENT

A number of doctors in the state have received a communication from the above-named organization signed by Esther Everett Lape, member in charge.

It is a straightforward letter apparently seeking an expression from experienced members of the medical profession concerning the question as to whether any essential change in the present organization of medical services in the United States is needed.

Apparently the information furnished will be put to the proper uses.

It is, therefore, sincerely hoped that members of the medical profession who were called upon for an opinion will comply in such a way that this foundation will have in its possession an understanding of the attitude of the doctors of this country who have had enough experience with people, sick and well, to have an opinion on the subject.

We are aware that the term "Foundation" has come to have a sinister meaning with doctors, owing to the fact that certain foundations have contributed so much to the agitation that has been going on with reference to medical services.

The author of this letter takes occasion to state that, in her opinion, "more heat than light may have been developed." We heartily agree with this statement.

The study proposed in the letter should yield a result valuable to the public.

DEATHS

Dr. W. C. Officer, Monterey; University of Tennessee, College of Medicine, 1902; aged 56; died suddenly December 25.

Dr. J. O. Nichols, Etowah; Lincoln Memorial University, Medical Department, Knoxville, 1894; aged 65; died December 31, after a short illness of pneumonia.

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Again the cycle of the months has passed and we find ourselves at the threshold of a new year. Opportunity spreads before us in open view; it also lurks behind apparent obstacles. Let us covet for ourselves as an auxiliary in the year that lies ahead the imagination and courage to make the most of every opportunity.

For some of us this turn of the year is occasion for choosing new officers. Congratulations are due the Auxiliary to Knox County Medical Society for their competent officers who were elected on December 11. They are: Mrs. Dewey Peters, president; Mrs. Benjamin B. Cates, vice-president; Mrs. S. J. Platt, recording secretary; Mrs. W. S. Nash, corresponding secretary; Mrs. J. F. Morrow, treasurer; and Mrs. J. B. Neil, historian. We only wish for this organization the measure of success during the new year as it has enjoyed under the splendid leadership of the retiring president, Mrs. H. E. Christenberry.

We will find near at hand new avenues of service to the medical profession which we all hold in such warm regard. Constant loyalty and untiring devotion to it will be the privilege of our local and state auxiliaries.

NEWS NOTES AND COMMENTS

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anon.

Speaking of records, we believe it will be hard to find any county that can sur-
pass Williamson. For the twenty-ninth
year Dr. K. S. Howlett has just been elected
secretary of his society. If any county can
beat that, it is "going some."

The 1936 examinations of the American
Board of Ophthalmology will be held May
11 in Kansas City (at the time of the Amer-
ican Medical Association meeting) and in
October in New York City (at time of meet-
ing of the American Academy). For infor-
mation write Dr. Thomas D. Allen, assist-
ant secretary, 122 South Michigan Avenue,
Chicago, Illinois.

The twentieth annual session of the
American College of Physicians will be held
in Detroit, March 2-6, 1936. Particulars
of the meeting can be secured by writing
E. R. Loveland, executive secretary, 133
South Thirty-sixth Street, Philadelphia,
Pennsylvania.

AN IMAGINARY EVENT WHICH COULD NOT
POSSIBLY HAVE OCCURRED, EVEN IF IT
DID OCCUR

There is a rumor current among the med-
ical fraternity in Nashville that on their
recent trip to Florida Drs. R. W. Billington
and Howard King were ready and the de-
parture of the party was delayed for twenty
minutes due to the fact that Dr. Eugene
Orr was late. No affidavits have as yet
been filed, by credible witnesses, with the
proper authorities so no great amount of
credence is being given to this startling

rumor by those who are intimately associated with the individuals concerned. It is generally believed that the failure, despite persistent efforts, to secure such a document indicates that this is not a fact, but only one of these unfounded rumors which is well-nigh impossible to trace to the miscreant in whose imagination it had its baseless origin.

The above rumor may be true, but the lack of authentic documentary evidence from credible sources seems to indicate that fear of action under the laws against perjury is acting as a healthy restraint.

At present and until such an affidavit from an unimpeachable source is produced the veracity of this rumor will scarcely be credited by individuals whose mentality remains unclouded by senility or disease or both.

MEDICAL SOCIETIES

Carroll, Henry, and Weakley Counties:

The Tri-County Medical Association met for the first time, December 10, since the election of new officers, with Dr. Barton McSwain of Paris, newly-elected president, presiding.

The program was one of the most interesting ever held, headed by a paper read by Dr. George Boone of Paris on "Collapse Therapy in Tuberculosis."

Dr. R. A. Douglass of Huntingdon read a paper on "Pneumonia," followed by a paper read by Dr. J. W. Williams of McKenzie on "Blood Pressure."

Dyer, Lake, and Crockett Counties:

Dyer, Lake, and Crockett County Medical Society met in regular session, January 1, 1936. Scientific program:

"Fractures of Proximal Third of Humerus," Dr. C. A. Turner, Dyersburg.

"Pernicious Vomiting of Pregnancy," Dr. N. S. Walker, Dyersburg.

"Rachitic Pelvis," Dr. R. C. Newkirk, Tiptonville.

"Acute Pancreatitis," Dr. E. H. Baird, Dyersburg.

The program was very instructive. Attendance excellent.

C. L. DENTON, *Secretary.*

Davidson County:

December 17—"A Review of 134 Cases of Multiple Sclerosis," by Dr. T. F. Frist. Discussion opened by Dr. F. H. Luton.

January 7 — Annual banquet at Belle Meade Club.

Greene County:

The Greene County Medical Society met in its regular monthly session at 6:30 P.M. December 3 at the Andrew Johnson Clubhouse. A delicious dinner was served by Mrs. Coile.

Following the dinner the society was called to order by the president, Dr. L. E. Dyer. Minutes of the previous meeting were read by the secretary, Dr. C. P. Fox, Jr., and routine business was discharged.

A paper, "Diagnosis and Office Management of Commonly Neglected Gynecological Conditions," was presented by Dr. W. T. Mathes and was well received and discussed by most of the members. After the regular program the annual election of officers was held.

The following members were present: Drs. Dyer, Mathes, Phillips, Coolidge, Cowles, Campbell, Henard, Laughlin, C. P. Fox, Sr., C. P. Fox, Jr., Blanton, Wendell.

Knox County:

December 17—"Hypertension," by Dr. E. P. Nicely. Discussion opened by Drs. Pope, Rule, Guynes, and R. B. Wood. Officers were elected.

Montgomery County:

At the December meeting Dr. H. H. Hunt of Mayfield read a paper entitled "The Trend of the Times." Officers were elected. A special Christmas dinner was enjoyed before the meeting.

Roane County:

The Roane County Medical Society met in the Harriman city hall, December 12. Those members present were: Drs. Roberts and Fly of Kingston, Dr. F. D. Owings of Rockwood, and Drs. Neergaard, Killeffer, and Hill of Harriman.

After the conclusion of the regular program, which consisted of a paper by Dr.

Hill and its discussion, the society elected its officers for the ensuing year.

Robertson County:

On December 17, Dr. and Mrs. C. F. DeLap had the society as guests for a quail dinner. Officers were elected. Dr. W. P. Stone spoke on "Blood Dyscrasias" and Dr. E. W. Adair spoke on "Treatment of Varicose Veins."

Four nominations for the County Board of Health were made.

Those present were: Drs. W. B. Dye, R. D. Moore, J. S. Hawkins, J. S. Freeman, W. S. Rude, S. J. Fentress, E. W. Adair, W. P. Stone, W. W. Porter, J. E. Wilkison, and W. F. Fyke.

The next meeting will be Tuesday, February 18.

Washington County:

At the December meeting two papers were read. Dr. W. M. Bevis read a paper entitled "Neuroses" and Dr. H. B. Cubb read one entitled "Foreign Bodies of the Joints."

A good attendance was reported.

White County:

The White County Society has had its best year just closing. Our attendance has been better than for many years—had ten scientific papers read. Our attendance has been 9 1/9 out of twelve members. Good fellowship is maintaining and we are expecting 1936 to be a good year.

The 1935 officers were reelected for 1936, which was out of the ordinary.

A. F. RICHARDS, *Secretary*.

Williamson County:

At the regular meeting of the Williamson County Medical Society on December 17, 1935, a paper on "Paresis, with Report of Case," was presented by Dr. K. S. Howlett and Dr. W. F. Roth, Jr., which paper was fully discussed by members of the society.

The following officers were elected for 1936: Dr. R. H. Hutchinson, president; Dr. R. K. Galloway, vice-president; Dr. K. S. Howlett, secretary-treasurer.

OTHER MEDICAL SOCIETIES

VANDERBILT UNIVERSITY MEDICAL SOCIETY December 6, 1935

1. Case Reports:

(a) "Case of Gestational Polyneuritis," Dr. Sam C. Cowan.

The first symptoms appeared in the fourth month of gestation in a primipara twenty-seven years of age. The fatal termination was four and one-half months later. Persistent nausea and vomiting with rapid weight loss occurred in the first trimester. This phenomenon occurs only in individuals who have had hyperemesis. The initial symptoms are characterized by tachycardia and loss of muscular power, most frequently in lower extremities. There is a tendency to progress upward with atrophic changes in the affected parts. Gross pathological changes are not remarkable. Microscopically, there are degenerative changes in nerves and anterior horn cells. The mortality (recent literature) is sixty-seven per cent. There was probably dietary deficiency with particular reference to vitamin B complex and proteins.

Case discussed by Dr. Youmans.

(b) "An Unusual Association of Rare Congenital Deformities in a Newborn," Dr. Beverly Douglas.

The patient, admitted at age of two hours, showed the following developmental anomalies: (1) Defect of almost the entire abdominal wall, only a thin transparent membrane continuous with the covering of the umbilical cord holding the abdominal organs in place. (2) Prolapse and extrusion of the terminal ileum. (3) Atresia of the colon and rectum. (4) Imperforate anus. (5) Complete exstrophy of the urinary bladder with ureteral orifice opening externally. (6) Complete prolapse of the uterus. (7) Division of the external genitalia. (8) Spina bifida occulta, and (9) Meningocele of lumbosacral region. At operation the defect was repaired with two long pedicle flaps brought down from the chest and sutured transversely over the membrane. The child took its feedings well, but died on the sixth day probably due to failure of

absorption of food. The skin flaps remained viable and the membrane underneath them was rapidly assuming adult characteristics. The occurrence of all these anomalies together is of extreme rarity. We have been able to find only one report of an identical case.

Paper discussed by Dr. Mason.

2. "A Quantitative Study of the Growth of Rat Tumors," Dr. Robert Schrek.

Quantitative methods were developed for the measurement of the size, latent period, and growth rate of transmissible tumors. These methods were used for the study of the effect of the following factors on tumor growth: inoculum, metastasis, contaminants, repeated transplantation, X-ray. From these studies it was concluded that (1) tumor growth is an orderly physiologic process, (2) the average growth rate is a physiological constant of a strain of tumor, (3) malignant growth is characterized not by an excessive growth capacity, but by a failure of the tumor to be inhibited or a failure of the tumor to differentiate.

Paper discussed by Drs. Goodpasture and M. Mason.

3. "Ether for Anesthesia: Do Different Lots Differ in Their Potency?" Dr. Benjamin H. Robbins.

Frequent complaints by anesthetists to chemical houses and occasional published comments that certain lots of "ether for anesthesia" differ in activity led to the present study. If different lots do differ, it would be manifested in concentrations in blood or tissues required for suppression of definite physiological mechanisms, or in rates of absorption. Examining three standard brands of ether on twenty-one dogs no differences were observed in concentrations necessary for suppression of different reflexes or death. In six experiments on thirty-six mice no difference in rates of absorption was observed between standard ether and two "weak" ones. Conclusion: Pure ethers "for anesthesia" do not differ in activity.

Paper discussed by Drs. Lamson and Blalock.

Plans are being completed for the annual meeting of the Midsouth Postgraduate As-

sembly at Memphis. This year the date is February 11, 12, 13, 14. The meeting promises to exceed in interest and attendance previous years.

The seventh annual assembly of the Southeastern Surgical Congress will be held in New Orleans, March 9, 10, 11, 1936, at the Roosevelt Hotel. For particulars address B. T. Beasley, M.D., secretary-treasurer, Southeastern Surgical Congress, 478 Peachtree Street, N. E., Atlanta, Georgia.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Vinyl Ether Obstetric Anesthesia for General Practice.
W. Bourne. A. M. A. December 21, 1935.

The author reports 652 administrations of vinyl ether to parturient women of all kinds and conditions. The agent was administered either by the drop method or with oxygen in a closed system having a carbon dioxide absorption attachment. The latter is preferred. That liver function is not impaired was proved by liver function tests on both humans and dogs. The author reports three cases from other sources where death occurred after vinyl ether administration, due to liver necrosis that he does not attribute to this agent.

Vinyl ether does not interfere with the muscular activity of the intestines or uterus. It is particularly suited for obstetric anesthesia in general practice on account of its safety to mother and child, ease of administration, rapidity of action, satisfactory maintenance of any degree of anesthesia, and early uneventful recovery.

DERMATOLOGY

By E. E. BROWN, M.D.
Doctors Building, Nashville

Pustular Bacterids of the Hands and Feet. Geo. C. Andrews, M.D., and Gerald F. Machacek, M.D. New York City. Archives of Dermatology and Syphilology. December, 1935.

The authors describe a recalcitrant pustular eruption of the palms and soles. They call it a bacterid (a cutaneous allergy) because it differs from pustular psoriasis, dermatophytosis, acrodermatitis continua and dyshidrosis. The patients usually show a positive reaction to staphylococci and streptococci toxins. The condition does not yield to the same treatment as do the other con-

ditions. Focal infection is found usually in the teeth or tonsils, and when found and removed the condition usually clears up rather satisfactorily.

Differential diagnosis, histopathology, and laboratory observations are given. Cultures from the pustules are usually negative.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 316 Doctors Building, Nashville

The Determination of the Rupture of the Membranes.

Arthur G. King. *American Journal of Obstetrics and Gynecology*. 30: p. 860. December, 1935.

Whether or not the fetal membranes have ruptured may at times be of great importance to the obstetrician. The history as related by the patient is often untrustworthy and by examination it may be difficult or the latter contraindicated.

Temesvary, in 1933, found a definite change in the pH of the vagina following rupture of the membranes. The pH values follow: Amniotic fluid 7.4; the vagina of pregnant women at term 5.2-6.0; the vagina of women with membranes ruptured 6.0-8.1. The admixture of alkaline amniotic fluid to the normally acid vaginal secretions changes the reaction in the vagina to the point where the resultant pH may be indicated by bromthymol blue which is exceedingly sensitive and the dye can be used to determine whether or not the membranes are ruptured.

The author used dibromthymolsulphonphthalein as the indicator which is known commercially as bromthymol blue and is easily and cheaply obtainable. The dye is dissolved in absolute or ninety-five per cent alcohol to make a 0.2 per cent solution. Well-made cotton applicators are dipped in the solution, allowed to dry, and then sterilized in glass jars by autoclaving. To perform the test the labia are separated and the applicator is introduced well into the vagina along the posterior wall and allowed to remain a full minute. When withdrawn, the applicator remaining the original orange color indicates intact membranes, however a change to blue green at any one point indicates ruptured membranes.

The author using this method in 314 patients found the test accurate in ninety-nine per cent of cases with intact membranes and in ninety-five per cent of cases with ruptured membranes.

Use of Dilaudid in Gynecology. G. L. Moench. *The American Journal of Surgery*. 30: 310. November, 1935.

One of the most important if not the most important drug available to the physician is opium and its derivatives, especially morphine. The advantages of morphine are tempered by some very undesirable side actions. The author objects to the fact that morphine is habit forming to the paralysis of the intestines and the close association in some cases of the analgesic and the soporific action.

Dilaudid is a derivative which is free from many of the secondary actions. It has a greater analgesic effect and is not followed by the feeling of elation resulting from the use of morphine. Thus while dilaudid is habit forming to a certain degree, it must be less than morphine on this account alone.

The author used dilaudid on the gynecological service of the New York Postgraduate Hospital and Medical School (Columbia University). He used dilaudid in 1/32 grain dosages (1/6 grain morphine-equivalent) and his trials were failures. The lowest effective and best dosage was found to be grains 1/20, both preoperatively and postoperatively. Postoperatively, the women who had received dilaudid had less vomiting and distention, complained less of "gas pains" and the abdomen was softer and flatter. Dilaudid does not inhibit intestinal peristalsis as does morphine and appears to affect the bladder similarly.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

Opacification of the Lens After an Alkali Burn of the Cornea. J. Nordmann. *Archives of Ophthalmology*. December, 1935.

A chemist had the cornea of his left eye burned by a thirty per cent solution of potassium. The entire central and inferior region of the cornea showed the usual signs of a severe chemical burn. After two weeks' treatment the cornea, pupil, iris, and aqueous were entirely normal. However, the central portion of the anterior of the lens was occupied by a multitude of fine opacities visible only with the slit lamp. After ten days these spots had entirely disappeared. While cataract after chemical burn was described before the era of the slit lamp, this is the first time a transitory cataract due to a chemical burn has been described.

PEDIATRICS

By JOHN M. LEE, M.D.
Doctors Building, Nashville

Poliomyelitis Following Vaccination Against This Disease. J. P. Leake, M.D., Medical Director, U. S. Public Health Service, Washington, D. C. *Jour. A. M. A.* December 28, 1935.

Several thousand injections of treated poliomyelitis virus have been given to children in the past year with the hope of immunizing these children against this disease. Twelve cases are reported in children receiving these injections who developed paralytic poliomyelitis within three weeks or less time after the injections were given. Six of these children died after being ill from three to five days, and the remaining six had paralysis at last reports.

The disease was not epidemic in the localities where these cases occurred.

"It is believed that to many physicians this series of cases, following by intervals of from six to fourteen days the injection of one or the other of two different vaccines, renders undesirable the further use of poliomyelitis virus for human vaccination at present."

"In every case in which the sequence is known, the level of the spinal cord first affected corresponded to the extremity in which the injection was made, paralysis beginning either in the same limb or in the contralateral limb. This is strong support to other evidence that the virus of poliomyelitis is transmitted along nerve fibres, since neither blood nor lymph streams would afford direct access from one extremity to the corresponding cord level."

SURGERY—GENERAL AND ABDOMINAL

By **BATTLE MALONE, II, M.D.**
1400 Monroe Avenue, Memphis

Surgical and Anesthetic Risk in Cardiac Disease. J. Hickman, M.D.; H. Livingston, M. D.; and M. E. Davies, Chicago. *Archives of Surgery*, Vol. 31. December, 1935.

Most medical textbooks state that cardiac disease is a contraindication to general anesthesia. This paper deals with the mortality rates from surgical procedures on cases with cardiac disease, stressing the type of cardiac lesion and the type of anesthetic used.

In a series of ninety-one patients with hypertension, with an average systolic pressure of 195 mm. of mercury, there were ten deaths, only three of which were due to cardiac disease. These three patients received spinal anesthesia.

There were eighteen patients with arteriosclerosis, with an average age of sixty-seven years. Eleven major and seven minor operations were performed, with three deaths, none of which was due to cardiac disease.

In selecting the best type of anesthesia for the above two classes, Horine considers local anesthesia the method of choice, especially in arteriosclerosis and warns against spinal or chloroform anesthesia, because of the marked fall in blood pressure accompanying the use of these agents. Ethylene-oxygen and local anesthesia were most frequently employed in patients with hypertension.

In sixty patients with compensated valvular lesions there was only one death and this was unrelated to the cardiovalvular system. Patients with compensated myocardial disease are generally believed to tolerate operations rather well. In the authors' series of forty-four cases there were four deaths, none of which were due to cardiac disease. Three patients of this class had cardiac symptoms during recovery from major operations.

The surgical risk of thyrotoxic heart disease has been reduced in recent years with improvement in medical and surgical management. In this series

of thirty-six patients there were three deaths, only one of which was due to cardiac disease. Horine prefers local anesthesia for these patients unless they are unduly apprehensive. He believes that auricular fibrillation is not the contraindication to general anesthesia in these patients that it is in patients with rheumatic heart disease. To the contrary, Lahey advises the use of ethylene and oxygen in all cases unless the blood pressure is markedly elevated.

Cardiac decompensation is generally believed to increase the danger of operation. In this series there were thirty patients with congestive heart failure, preoperatively there were five deaths, one of which was entirely due to cardiac disease, and in two cardiac disease played an important role. Ethylene-oxygen and local anesthesia were used in most cases.

In the series of ten patients with congenital heart disease there were nine minor operations with ether anesthesia and one major operation with ethylene-oxygen plus ether anesthesia. There were no deaths and but one cardiac complication during recovery.

In patients with coronary occlusion and angina pectoris anesthesia and surgical operations are graver risks, the author's mortality rate for the former being 12.5 per cent, and of the three cases with angina pectoris operated, one died.

Heart block does not contraindicate operation or anesthesia. In thirty-one patients with miscellaneous cardiac lesions, such as questionable rheumatic heart disease, cardiac murmurs, bradycardia, and all lesions not clearly diagnosed, there were two deaths, both of which were unrelated to the cardiac or pulmonary systems.

In a summary of all series in 336 patients with some cardiac disease there were six deaths due to cardiac disease directly related to the surgical intervention and anesthesia. Angina pectoris, coronary occlusion, decompensation, hypertension, and thyrotoxic heart disease are in the order named the most serious diseases with which one has to deal. Inhalation anesthesia, particularly ethylene-oxygen, is safe when a high percentage of oxygen is used and asphyxia or struggling is avoided. The use of spinal, ether or nitrous-oxide-oxygen is thought to increase the incidence of postoperative complications and death.

UROLOGY

By **TOM R. BARRY, M.D., F.A.C.S.**
By **G. A. WILLIAMSON, JR., M.D.**
Medical Building, Knoxville

Teratoid Tumors of the Testis. Archie L. Dean, Jr., M.D. New York. *Jour. A. M. A.* December 14, 1935.

This author reports a series of 292 patients with testicular teratomas. These tumors comprise 3.3 per cent of all tumors of the genitourinary system. The patients varied in age from one to seventy years, the average age being 31.87 years.

Eighty per cent were less than forty years old. The right testicle was invaded in 52.2 per cent and the left in 47.8 per cent. Fourteen and twenty-eight hundredths per cent of the tumors were in undescended testes.

From the clinical standpoint, he classifies teratomas into three groups:

First—Adult teratomas, which comprise less than ten per cent of the tumors. These grow slowly and tend to metastasize late.

Second—The intermediate type of teratomas, which contains both adult and embryonal tissue.

Third—The embryonal teratomas, which are the most malignant, giving rise to rapidly-growing metastasis through the lymphatics early in the disease, many cases having generalized metastasis before the primary testicular tumor is noticed.

Metastasis through the lymphatics usually precedes that through the veins. The usual route follows lymphatics of the spermatic cord through the pelvic and lumbar vessels to epigastric nodes and thence up the prevertebral chain through the mediastinum and along with the thoracic duct to the supraclavicular fossa. Metastases through the veins were usually first found in the lungs, but may later be found in most any organ of the body.

The Asheim-Zondek test is of considerable value in the diagnosis and prognosis of teratoid tumors of the testes, when made before or soon after treatment. When the patient has gone for eight months or more after treatment without any evidence of the disease, this test becomes irregular, and is of doubtful value.

The treatment of these tumors consists of both surgery and irradiation. When there is no evidence of metastasis, the treatment consists of irradiation followed by surgical removal from four to six weeks later. When metastases are present, orchidectomy is seldom performed and irradiation alone is employed. Twenty-nine per cent of 170 patients with metastasis who had irradiation alone were living and well after five years.

BOOK REVIEW

Infant Nutrition. A textbook of infant feeding for students and practitioners of medicine. By W. McKim Marriott, B.S., M.D., Professor of Pediatrics, Washington University School of Medicine; Physician-in-Chief, St. Louis Children's Hospital, St. Louis. Second edition. Cloth. Price, \$4.50. Pp. 434, with twenty-six illustrations. St. Louis. The C. V. Mosby Company.

In view of his outstanding contributions to the knowledge of infant feeding and nutrition, anything published by Dr. Marriott will be read with much interest by all who are interested in pediatrics. The text of the first edition has been thoroughly revised and rearranged and brought up to date, much new material being added throughout the book.

About half the book is devoted to consideration of metabolism, normal nutrition, and infant feeding, including both artificial and breast feeding. The remainder is given over to discussions of the common nutritional diseases of infancy, diarrhea, dysentery, vomiting, rickets, scurvy, etc. The newer facts on vitamins are given in the chapter on that subject. A chapter on allergy has been added.

By rearrangement, elimination of repetition and omitting subject matter belonging more properly in general textbooks on pediatrics, the size of the book has been decreased. A new binding and better paper and printing add to the attractiveness of the volume. Every pediatrician will want this book, and all who attempt infant feeding should have and study it.—J. M. L.

THE JOURNAL

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W. M. HARDY, M.D., Asst. Secretary-Editor

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EXTRAPERITONEAL PATHOLOGY WITH INTRAPERITONEAL SYMPTOMS*

JOHN B. HASKINS, M.D., Chattanooga

I AM ENDEAVORING in this paper to call your attention to extraperitoneal diseases that are often mistaken for intraperitoneal lesions. The patient's life is often endangered thereby unless the correct diagnosis is made. I feel that as near as possible we should ask ourselves the question, "Am I doing for my patient what I would want done for me or mine under similar circumstances?" and if we doubt, we should try to bring more light on this particular case.

So far as I know we are living in the greatest age of all times. Medical science, perhaps, has made the greatest strides of any line of endeavor in the last fifty years. Its accomplishments in the last half a century have been equal, I think, to its accomplishments since Hippocrates. Even at that we are a long way from Utopia, and so far as the mind of man can perceive the Utopia in medicine will prove to be as elusive as the rainbow or horizon.

Any cavity of the body offers ample opportunity for study, both to the most omnivorous student and practitioner of medicine, as well as to the research worker.

We can boast today of many instruments of precision, many laboratory tests that are greatly worth while, but there is no test yet devised capable of replacing real clinical

acumen. Good judgment, ballasted by experience, in arriving at a correct diagnosis should be the goal for which we are all

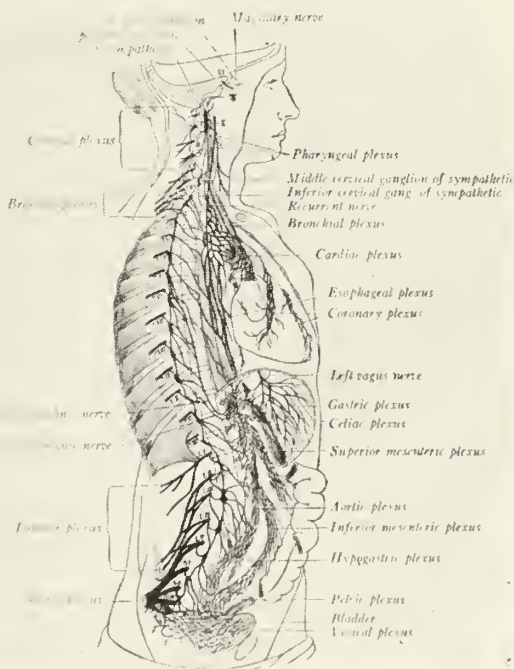


Fig. 1.—"The Sympathetic Nervous System" (Schwalbe-Herrick). To show the wide distribution of sympathetic innervation over the body, especially in the head and neck and thoracic and abdominal cavities.

striving. It takes many years of hard work, study, and observation to capture good judgment. Real wisdom is always around the corner.

*Read before the Tennessee State Medical Association, Nashville, April 9, 10, 11, 1935.

Walsh, Morgan, Paullin, and Bolen have recently directed attention to a series of thirty-odd cases of poisoning from the bite of *Latrodectus mactans* (the black widow spider). The outstanding complaint of these patients is acute severe abdominal pain associated with marked intense muscular rigidity, leucocytosis and occasionally fever. So clearly does the clinical picture resemble an acute surgical emergency that some of these individuals have had exploratory laparotomies.

The association of abdominal crises in patients with migraine is seldom mentioned. Blitzen and Brams report ten cases characterized by severe, boring epigastric pain without relief from food, alkalies, nausea or vomiting. There is slight muscular rigidity in the epigastrium, no fever. During the attacks of abdominal pain, which may last from one to four days, the hemicrania disappears. Five of these patients had abdominal operations without finding anything abnormal. The diagnosis usually can be made from the history and the characters of the attacks. Stevenson reports three cases of epidemic encephalitis in which abdominal pain simulating an acute surgical lesion was suspected. The correct diagnosis, he says, was subsequently made by the appearance of diplopia, myoclonus, widespread hyperesthesia and lethargy.

Among other conditions and diseases with which you are familiar as causing acute pain referred to the abdomen, I wish to mention pneumonia, diaphragmatic pleurisy, pericarditis, herpes zoster and tonsillitis; with the onset of some of the acute infectious diseases, scarlet fever, measles, mumps, rheumatic fever, influenza, and typhus fever.

Chronic poisoning with such substances as lead, arsenic, and mercury may give referred pain. Paullin reported a case that was about to undergo surgical treatment for an acute ruptured peptic ulcer, but was saved from such a catastrophe when an alert house officer observed a distinct lead line on his gums. The referred pain of Pott's disease and the abdominal crises seen in *tabes dorsalis* are well known to all. An interesting group of cases to which atten-

tion was first directed by the late Sir William Osler includes Henoch's purpura, angioneurotic edema, urticaria, and other states in which abdominal pain with or without skin manifestations may be the most striking symptom. Allergy is as yet very poorly understood and I think I can say with certainty that allergic reactions that could and do simulate acute surgical abdominal pathology are an almost, if not an entirely, unrecognized entity today. Arteriosclerosis, atheromatosis, thromboangiitis obliterans, angina pectoris and sudden occlusion of a coronary artery furnish examples of abdominal pain which are very often extremely difficult to diagnose correctly. Some of the country's best surgeons are honest enough to say that they have opened the abdomen for certain acute cardiac conditions, after a thorough study, being heart-minded, and after all the instruments of precision for correct diagnosis had been used.

I am not placing myself in the best group by any means, but I have done three such operations not being unmindful clinically of the possibility of there being pathology above the diaphragm, but of course I did not have all the other diagnostic measures that the great centers afford. Other conditions such as septicemia, bacterial endocarditis, pyelitis, pyelonephritis, renal and ureteral calculus have been the cause of many useless abdominal operations.

Patients who have chronic abdominal pain always present interesting diagnostic problems which require time, patience, and clinical judgment on the part of the physician for their correct solution.

Certain diseases of the central system such as syphilis, transverse myelitis, either primary or metastatic tumors of the spinal cord and its coverings, infiltrating tumors, osteoarthritis of the spine, tuberculosis of the spine, scoliosis with arthritis, all frequently cause pain referred to the abdomen. Other causes of referred abdominal pain are disorders of the ductless glands, thyrotoxicosis, pituitary dysfunction, heart disease, particularly right-sided failure; renal infections and calculi, hydronephrosis,

ureteritis, ureteral stricture, and periarteritis nodosa.

Houston refers to a group of cases known as "spasmogenic aptitude" who come to you with many fears, anxieties, worries, conflicts, maladjustments, repressions, inhibitions and general emotional instability, and who wander here, there, and yonder receiving many diagnoses at the hands of many physicians, such as chronic appendicitis, chronic cholecystitis, retroflexion of the uterus, cystic degeneration of the ovary, cardiospasm, pylorospasm, mucous colitis, visceroptosis and so on.

SUMMARY

No. 1—When men of international reputation in medical centers, with instruments of precision for diagnosing, consultants with mature clinical acumen, make erroneous diagnoses of intraperitoneal pathology, and operate when the pathology is extraperitoneal, you and I cannot hope to always differentiate these cases and make 100 per cent correct diagnoses.

No. 2—Neither the physiological or pathological mechanism of the autonomic ner-

vous system is fully understood. The autonomic nervous system is such a delicate lacework surrounding the blood vessels, nerves and giving nerve impulses that are not constant and perhaps never will be, that it really offers a big field for diagnostic error.

No. 3—The best we can do in making intraperitoneal diagnoses is to think of all the extraperitoneal causes of intraperitoneal pain and symptoms, as well as of all the intra-abdominal lesions which give intraperitoneal and abdominal symptoms and occasionally extraperitoneal symptoms, and work up our cases the best we can, using every available laboratory means to that end, and if not satisfied, get the best mature, well-balanced and ballasted consultation that we can.

No. 4—We should ever be ready to swap off good diagnostic signs and symptoms for better ones, and I feel sure that better ones will be evolved from the autonomic nervous mechanism. We should ever be on our toes trying to improve, keeping abreast with every advancement to the end that we may serve humanity better.

THE DIAGNOSIS AND REMOVAL OF FOREIGN BODIES FROM THE LOWER AIR PASSAGES*

CHAS. K. LEWIS, M.D., Memphis

OF RECENT years so much has been written about the bronchoscopic treatment of foreign bodies in the lower air passages that anything said on this subject now can only be regarded as reiteration. The technique remains essentially the same, the same forms of anesthesia are employed, and the same problems present themselves. The object of this paper is to call attention to the importance of early diagnosis, and stress the importance of bronchoscopic examination in cases of patients suspected of having aspirated a foreign body.

When the science of bronchoscopy was in its infancy, the cases reported of foreign bodies in the lower air passages were comparatively rare. Unless the patient was known to have aspirated something, these cases were frequently treated as suffering from some pulmonary condition, such as chronic bronchitis or tuberculosis. The presence of a foreign body was not suspected until a radiogram was made of the chest, and the X-ray still remains our most important factor in arriving at a diagnosis in these conditions.

Although foreign bodies are found in the lower air passages of individuals of any age, the vast majority occur in children, and it is in consideration of this group that I shall make my observations.

The child in early infancy puts everything he can get his hands on into his mouth, and then when he is startled suddenly, or falls, the foreign body is sucked into the windpipe. The symptoms produced by such an accident are: paroxysmal coughing and perhaps cyanosis. Later, when the foreign body has become fixed in one of the bronchi, the symptoms may be a slight cough, wheezing, and a mild elevation in temperature.

Any organic substance, such as a peanut, grain of corn or a watermelon seed, lodged in a bronchus and allowed to remain there, quickly produces a fatal result. This is brought about by pneumonia, and a terminal gangrene of the lung. Any inorganic material, such as a tack or a bead, if large enough to plug one of the main-stem bronchi, usually is fatal if not removed. In this event the air becomes trapped in the lung and absorbed, causing a massive atelectasis. If it is small enough to allow the air to pass freely in and out of the bronchus, it may remain for some time without causing any symptoms at all.

Of the organic substance removed from the tracheobronchial tree, grains of corn, peanuts, beans, and cockleburrs I have found to be the most common in the order named.

The diagnosis of a foreign body from the physical findings alone is by no means easy. If a child is believed to have aspirated anything, he should be kept under careful observation until it be proved by all the different tests that he has not. In the majority of cases the symptoms, after the initial paroxysms of coughing are over, may be very slight, or absent entirely for a few days. When symptoms do appear they vary according to the size of the foreign body and its location. For example: If a child begins coughing and is suspected of having aspirated anything, the first place to examine is over the trachea. If the foreign body is loose in the trachea, it causes a flapping sound, which may be heard by placing the stethoscope on the neck, just above the suprasternal notch. On inspiration the object is drawn down to the bifurcation of the trachea, and on expiration it is blown up against the vocal cords. This is extremely dangerous, for if the foreign body sticks at the bifurcation, both main-stem bronchi may be plugged.

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When a foreign body lodges in a main-stem bronchus, closing it up entirely, there results an obstructive atelectasis. The chest wall is retracted over the affected side, the percussion note is dull or flat, tactile fremitus, breath sounds and voice sounds are diminished or absent.

Again the foreign body may close the bronchus in such a way as to allow the air to enter the lung, but not leave it, and here we have an obstructive emphysema, the principal signs of which are diminished tactile fremitus, breath sounds and voice sounds, with a hyperresonance or high-pitched tympani due to the overdistended lung.

Intrabronchial foreign bodies causing no emphysema or atelectasis may remain in the chest without giving any abnormal physical findings whatsoever.

When a foreign body is associated with excessive intrabronchial secretion or pus, these secretions follow the law of gravity and collect at the most dependent area. These areas will be different, according to whether the patient is erect or lying down or turned over on one side or the other. This is known as "internal drainage." The foreign body may be in one bronchus, and the secretion caused by its presence may flow over into the bronchus on the opposite side of the chest, causing the same symptoms as those found on the side of the foreign body.

Every patient suspected of having aspirated a foreign body should have an X-ray examination. Metallic and opaque bodies are readily visualized with the X-ray, but the diagnosis of nonopaque objects must be based on the changes that have taken place in the chest. For example: In the case of a watermelon seed lodged in the right main-stem bronchus, an irritation is set up, followed by an edema of the mucous membrane. Foamy secretion accumulates above and below the seed; there is a massive atelectasis, causing the heart to be drawn over to the right side. On the X-ray film the right of the chest appears cloudy, while there is a compensatory emphysema of the left. Sometimes an opaque foreign body may fail to show up on the X-ray film

because it is bathed in pus, and if it is of long standing, is probably surrounded by granulation tissue.

Having obtained a clue as to the probable location of the foreign body from the X-ray, and examination of the chest wall, we examine this region first through the bronchoscope. If the foreign body is not on the side where these findings have located it, then the opposite bronchial openings must be examined, as the object may have moved from one lung to the other. This entire examination can be done in two or three minutes.

After locating the foreign body, before an attempt is made to extract it, a study should be made from all possible angles in order to determine mechanical difficulties present, and to select the best method of removal. As a rule, all foreign bodies are removed much more readily if bronchoscopy is done immediately. If days are allowed to pass before treatment is instituted, not only the foreign body has to be dealt with, but also the secondary inflammatory changes which result from its prolonged stay. The mechanical principles involved in the removal of foreign bodies depend largely upon whether the object is smooth or sharp, except for peanuts and cockleburrs, which are in a class by themselves, because of the rapid and violent inflammatory reaction which they set up.

According to my experience, the operation of bronchoscopy is performed preferably under general anesthesia. In very young children such anesthesia may not be necessary. The child can be wrapped in a sheet and held by assistants in the proper position. Occasionally, in older children, who refuse to cooperate, and who are too large to be restrained, it is advisable to give ether.

All laryngeal and bronchoscopic work is done under direct vision. A laryngoscope is used to expose the vocal cords, then a bronchoscope is passed into the trachea and down into the main stem and such of the bronchi as can be examined. If the foreign body has a smooth surface and has recently been aspirated, the removal is, as a rule, not difficult. In the case of sharp-pointed

objects, such as tacks and open safety pins, care must be taken to grasp them by the point in order to prevent their perforating the trachea and causing a mediastinitis, which nearly always results in death.

Following bronchoscopy, especially in very young children, certain complications may arise, and the child should be kept under close observation for thirty-six hours, if possible. As a result of trauma caused by the passage of a bronchoscope between the vocal cords, an edema of the larynx may follow. This may vary in severity from wheezing and hoarseness, to complete obstruction of the glottis, necessitating a tracheotomy. In order to reduce this edema, solutions containing ephedrine or adrenalin are sprayed into the child's throat or dropped into its nose. I have found oxygen to be most valuable in treating this condition, so much so, that I use it routinely in every case. The child is put into an oxygen tent, such as is used in the treatment of pneumonia, and kept there until all danger of edema of the larynx is past. I do not understand the physiology of this treatment, but I have found that the cases treated in this manner get along remarkably well.

Concerning the secondary changes brought about by the prolonged stay of the foreign body, as has been stated, those occurring because of an organic substance are more severe than those from inorganic, because of the irritating decompositions produced from these substances.

The patient in whom pulmonary sup-puration has been present only for a short time can expect a cure as soon as the cause is removed. In others, it may be necessary to treat the lung condition afterward. However, I do not remember ever having seen a case that required bronchoscopic treatment after the successful removal of the foreign body.

DISCUSSION

W. W. WILKERSON (Nashville): No ear, nose, or throat program is quite complete without an essay on endoscopy. While it is true that many men have never done any work of this type, and others of us have discontinued it, still there is a definitely stimulative effect in keeping endoscopy before us in order to aid us in diagnosis. Furthermore it enables us to give intelligent ad-

vice to those in need; in need not only because of the foreign body in the lung, but also because of the drama of the unfortunate event. The spectacular scene created by a choking child, who has just aspirated a penny into his lung, is one which requires the clear head of a properly informed man. Unswayed by the frenzy of the parents and the apparently critical condition of the child, he must be adamant in his advice.

In my discussion I would like to point out those salient facts which should be known by every man who proposes to advise bronchoscopic patients. Due to the mechanics involved in bronchoscopy only those men with excellent training, a mechanical turn of mind, and a thoroughly trained team can hope to do this work with a low mortality rate. This should be borne in mind when such a patient presents himself to us.

Many cases have been lost because the operation was performed before a complete diagnosis had been established; many for the reason that all of the mechanical problems had not been studiously sought prior to the operation. Do not attempt to rush the endoscopist. He will operate on the patient as soon as it is feasible.

Other cases, particularly those outside the large metropolitan areas, have been lost because of the lack of general anesthesia. I am convinced that general is safer than local or no anesthesia if the operator has the opportunity of doing only a moderate number of cases.

One of the most important phases of bronchoscopy is the length of time of the operating procedure. Only those men who work rapidly should do this type of work. They should limit all procedures as to time, realizing that in the case of inorganic foreign bodies a secondary operation is preferable to a prolonged primary operation. I emphasize this point, as there is much shock in these cases prior to the removal, which adds greatly to the shock of the bronchoscopic surgery.

On the contrary, one must appreciate the fact that organic foreign bodies are much more deadly than inorganic. They should be removed as speedily as practical, and if necessary it is safer to prolong this removal, within certain limits, than to leave the organic foreign body in situ.

While we are all cognizant of the relation of sinus diseases to bronchitis still we overlook the fact that many people who are suffering from so-called bronchitis are really carrying foreign bodies in their lungs. It therefore might be wise, in certain cases, for us to suggest an X-ray of the chest as well as an X-ray of the sinuses.

When I was doing this work I lost two cases because of poor nursing; one case was laryngeal oedema, and the other a tracheotomy case. I would strongly urge that only nurses with known ability be used in these cases.

I am sure that we all appreciate Dr. Lewis' presentation of an excellent essay.

EDGAR L. GRUBB (Knoxville): Dr. Lewis has presented an important condition in a most concise and interesting manner. He has pointed out the usual sequence of events when intrapulmonary foreign bodies are undetected or not diagnosed and removed and has described the easy cure. While many of such cases are comparatively easy to operate, there are, as every endoscopist recognizes, many problems associated with the technical phase of this subject. These are peculiar to the individual case and require an exhibition of intelligent reasoning at the time of operation. One's appreciation of such difficulties is materially enhanced when using a 4 mm. scope on a very sick baby with a vegetable foreign body imbedded in an area of intense swelling of the bronchial mucous membrane preventing any forceps space and the entire area covered with mucopus. Despite the poor outlook at the moment of operation if the foreign material is completely

removed, there is a rapid and uneventful recovery.

The essayist has mentioned most of the signs and symptoms noted in such cases. However, I would mention one finding that may be of occasional importance, and that is a diminution in the excursions of the diaphragm, even though there is not a complete occlusion of a bronchus, and the roentgenogram otherwise shows very little. Such pictures taken both during inspiration and expiration are often helpful.

Those of us doing endoscopy should at every opportunity remind the general practitioner, through papers and case presentations, of the importance and prevalence of intrapulmonary foreign bodies.

Wide dissemination of the information given us by Dr. Lewis' paper will assist materially in alleviating the tragic complications attendant to this rather frequent condition.

TYPHUS FEVER*

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TYPHUS FEVER is an acute, infectious disease characterized by sudden onset with chill, high temperature, with rash and nervous symptoms, ending by crisis or rapid lysis about the sixteenth day.

Historical.—The term “typhus” was applied from the time of Hippocrates to the condition characterized by stupor and delirium. The name “typhus” was apparently first applied to this disease by Sayvages in 1760. Probably the first to describe the disease correctly was Fracastorius, of Verona, who saw epidemics in Italy in 1505 and 1528. It has been at different times dubbed “jail fever,” “camp fever,” “ship fever,” and various other names. It has prevailed in epidemics, particularly around the Mediterranean basin, from the remotest time. Zinsser has attempted to connect some of the so-called plagues of ancient Rome and Greece and Egypt with typhus. However, the descriptions given by the writers of these plagues have been so vague that it has been impossible to ascribe it to the typhus infection. It was not until the eleventh century that the epidemics of the Mediterranean basin were described with sufficient detail to make us suspect that typhus was meant. According to Hirsch, the first definite record of epidemic typhus fever occurred in a monastery near Salerno, Italy, in 1083. There have been epidemics in North America from the time of the Spanish Conquest of Mexico. It plagued the soldiers of Cortez and was left as a heritage to the innocent Indians. This has occurred, both endemically and epidemically, in Mexico since the Spanish Conquest. There have been other reported epidemics in North America, namely, Quebec and Montreal in 1820; Halifax in 1827; Boston in 1838 and 1847; New York in 1818, 1825, 1837, 1847, 1852, 1881, and 1892; Philadelphia in 1827, 1836, and 1847; New Orleans

in 1847. Probably the last epidemic in the United States was among the Navajo Indians in New Mexico in 1920 and 1921, probably brought in from Mexico.

The disease in this country has not been nearly so virulent and fatal as attended the epidemics in Europe. The workers in the U. S. Public Health Service speak of two types of typhus fever: one endemic and the other epidemic, or Mexican or American, and European. The mortality in epidemics in the Mediterranean basin in the past has ranged from twenty to fifty per cent, the death rate being extremely heavy among those who cared for the patients as nurses and physicians.

Our paper deals with the type as found in this country, or the endemic form, though it appears from the evidence already deduced that it is possible for the endemic form, which is shown to be transmitted from the rat, which serves as a harbor, by the rat flea to man and, under proper conditions, in lice-infested areas transmitted from man to man by the body louse. The endemic type then is transmitted from rat to man by the flea, while the epidemic type is transmitted from man to man by the louse.

The American type of the disease was first described by Dr. Nathan Brill of New York City, in 1898, who reported seventeen cases seen by him which resembled typhoid fever, but had a more distinct rash and did not give the Widal reaction. In the early part of this century many more similar cases were seen, and by 1915 he decided that the disease was a form of typhus fever. However, he noted that the seasonal occurrence was different from that in Europe, appearing more in summer and fall, rather than in winter and spring, as had been noted with the European type. Also he noted that it did not seem to be contagious, or was not transmitted from one individual in the house to another, as had been observed in European epidemics. Since 1915 it has been recognized and reported from

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many sections from the United States, chiefly along the Southern Atlantic and Gulf Seaboard. Typhus fever was first recognized in Alabama in 1922 by the Weil-Felix reaction. Sixty to eighty cases per year from 1922 to 1932 were reported in the state. In 1932, there were 237 cases reported, with eleven deaths. In 1933, the high peak of the disease was reached, during which year 823 cases with thirty-five deaths were reported. By this time it had already been ascertained the rat flea was the vector and it was noticed that the largest number of cases occurred in areas where rats and mice abounded. It was at this time that the Board of Health, through C. W. A. federal aid, inaugurated a rat-killing campaign. Four million rats were destroyed. In 1934, there was a marked decrease in the number of cases.

According to the Tennessee Morbidity Statistics, for ten years (1925 to 1934, inclusive) the first case of typhus fever reported in this state was in Shelby County in 1926. Two were reported in 1928; two in 1929; one in 1931; two in 1932; one in 1933; and none in 1934. So far as I can ascertain, the case which occurred on my service in the Nashville General Hospital in July, 1935, is the first case officially reported in the city of Nashville.

Etiology.—It is now definitely proven that typhus fever is due to the presence of a specific virus. The virus is transmitted by the rat flea from infected rats to man, and from man to man by the body louse. While the rat flea and the human body louse are the important vectors of this virus, it has been demonstrated that the rat louse is capable of transmitting the disease. It appears the head louse is capable of transmitting the disease from man to man. The first suggestion that the body louse might be the vector of epidemic typhus was made by Tobias Cober in 1708. In 1903, Cortezo, in Madrid, 200 years later, gave as his opinion that the disease was transmitted by the louse. It was in 1909 that Nicolle was able to transmit the disease to monkeys by the body louse. In 1912, Goldberger and Anderson confirmed Nicolle, and also found that the head louse was infectible. It was

observed that there was a seasonal difference in the occurrence of the American, or endemic, type, and the European, or epidemic type, the American type occurring in summer and fall whereas the European type occurred in winter and spring. It was also noted that it occurred in people that handled foodstuffs, or in rat-infested areas. This led observers to suspect that the rat was concerned in transmission of the disease, as had been found the case in the Bubonic plague.

In 1926, Maxcey suggested the possibility of the virus being kept alive in an animal reservoir, probably a rodent, and transmitted to man by some insect other than the louse. This was corroborated in 1931 by Dyer and his assistants when they isolated a virus of this type from the fleas of rats trapped around Baltimore and similar virus from rats caught in the Belem Prison in Mexico City during an epidemic.

In 1910, Ricketts described some small pleomorphic bodies found intracellular in the peritoneum and tunica vaginalis, and in brain tissue. The presence of these bodies has been confirmed by others, namely, Clara Nigg, of the Rockefeller Institute, and Anderson and Goldberg, and others. These bodies are very small and vary in shape from small coccoid bodies to small rod-shape type one or two micra in length. They cannot be grown, as ordinary bacteria, on an artificial culture medium, but only in a plasma or a medium containing a serum and always with minced living tissue cells as from the peritoneum and tunica of infected guinea pigs or rats. Clara Nigg was able to keep the culture viable and virulent for many months when stored at a temperature of thirty-seven or a minus twenty centigrade. She was further able to keep them alive for three years by the use of a plasma tissue medium.

Clinical Course.—Incubation period is from six to seventeen days.

Onset.—There are a few prodromal symptoms. Usually the attacks come on suddenly with headache, fever, and prostration. In my cases the headache has not been pronounced, such as in typhoid fever, but the patients complained considerably of

a fullness, and discomfort, and a heaviness in the head. The temperature rose steadily, the maximum being reached about the eleventh to the thirteenth day. There was a remission of one to three degrees in the morning and, in both of my cases, the temperature dropped to normal, or practically normal, on the morning of the second or third day, and one of them rose to 105 degrees at 5:00 P.M. Maculopapular (chiefly macular) eruption appears on the fourth or fifth day, usually noticed first on the chest and abdomen, the lesions being irregular in shape, darkish pink in color, and varying in size. The pulse is usually slow and regular. There may be restlessness, insomnia, and delirium at the height of the disease. Photophobia with a mild conjunctivitis is usually present. A mild, unproductive cough and constipation is the rule. The disease usually reaches its height about the eleventh to the thirteenth day and terminates by crisis or rapid lysis. The patient is generally free of fever by the fourteenth or sixteenth day.

Diagnosis.—Diagnosis may be made by noting the above symptoms and by the absence of a positive Widal, and the presence of a Weil-Felix reaction. The test is considered diagnostic if the agglutination is positive in a dilution of one to 160.

Prognosis. — The prognosis is usually good, but the mortality rate in this country runs from one to four per cent.

Laboratory.—At the height of the disease the urine may contain a trace of albumen, and casts.

The blood usually shows a leucopenia. One of my cases had a mild leucocytosis, 10,000 or 12,000. The differential count runs about normal.

Treatment.—The treatment in the main is symptomatic. Absolute rest in bed, sedatives, ice bag at the height of the fever. Immunizing vaccines have been made both in this country and in Europe. In Europe vaccine has been made from typhus-infected lice and apparently offers protection, but the supply is necessarily limited. In this country a vaccine has been prepared by Zinsser from rickettsii, taken from the peritoneal cavity of typhus-infected rats,

and has recently been tried in Mexico. Vaccines from infected fleas seem to offer protection; however, these vaccines are still in the experimental stage.

CASE REPORT NO. 1

Mrs. A. H., white, widow, age 58, occupation housework, residence 210½ Fifth Avenue, North, was admitted to the Nashville General Hospital on June 24, 1935.

Complaint: High fever, rash.

History: Six days ago had a chilly sensation, but no hard chill, followed by fever. Was seen by a physician and given some calomel and quinine, but continued to have high fever and chilly sensations. On the fifth day another physician was called, as she was no better, and she was sent to the hospital.

Family and personal histories unimportant.

Physical examination: High temperature (103 degrees) and macular rash over the body. Pulse 95, respiration 24. She had some cough, which was unproductive, and slight bronchial rales heard throughout both lungs. She did not complain of severe headache, but spoke of a fullness or discomfort in her head. The spleen was not palpable and there was no abdominal distension or soreness in the abdomen, and no diarrhea. There was a marked macular rash distributed over the body, thighs, and arms, but very faintly, and not marked on the forearms, legs or not at all on the face. These patches varied in size from 2 mm. to 8 or 10 mm. in diameter and were irregular in outline.

Laboratory: Catheterized specimen of urine negative.

Blood: June 24, 1935, W.B.C. 12,200; June 29, W.B.C. 13,400. R.B.C. 4,800,000. Hem. 70 per cent. Differential count polys. 78; L. 20; E. 1; L.L. 1.

Blood culture negative. Wassermann negative. Kline one-plus. A tentative diagnosis of typhus fever having been made, the Weil-Felix reaction was found positive one to 160 on June 29, 1935, which was the tenth day of the disease. No further agglutinations were made. X-ray of the chest showed increased infiltration in both lungs

due to bronchitis and a small amount of bronchiectasis. No evidence of T.B. activity.

The temperature on the sixth day was 103, which was reached about 1:00 P.M. The temperature reached the normal mark at 5:00 o'clock in the morning on the seventh day of illness and dropped each morning as low as ninety-nine degrees, or even less. The peak of temperature was reached on the eleventh day when it went to 104 at 1:00 P.M. From this time it rapidly declined and on the sixteenth day it reached normal and remained. She never at any time seemed very sick and was discharged on July 5, 1935, recovered.

CASE REPORT No. 2

C. K. M., white male, age 42, telegraph operator with Postal Telegraph Company, located at 232 Fourth Avenue, North, this city.

On October 31, 1935, he came home from work complaining of headache, some fever, aching and feeling badly in general. That night he had a chill and temperature went to 103. I saw him first on Friday, November 1, 1935, with temperature 104, pulse 80, and respiration 20, complaining of dull headache with a fullness and uncomfortable feeling, and a slight, unproductive cough.

Having treated him in the past for an old, fibroid tuberculosis with a spontaneous pneumothorax six years ago, I naturally was looking out for a flare-up of this condition, but was unable to make out any activity. The next morning I found that he had had a rather uncomfortable night, but his temperature was normal. Making a tentative diagnosis of malaria I obtained a smear for examination and put him on large doses of quinine. The smear was negative for malaria and the leucocyte count was 5,280. That afternoon his temperature went to 105, dropping in the morning to almost normal. I obtained blood for a Wassermann and also for tests for the different fevers. The report was negative to all except typhus, which gave Weil-Felix agglutination one to eighty. On the fourth day there appeared a macular rash on his chest and abdomen, which spread over his

entire body except the legs, feet, face, neck, forearms, and hands. It was more pronounced on his chest and abdomen. On Wednesday, the sixth day, the blood gave a reaction of one to 160. His temperature went to 105 in the afternoon and dropped to 99 or 99½ degrees in the morning. He was very restless at night, complained of insomnia, and had a rather pronounced photophobia with a mild conjunctivitis. The spleen at no time was palpable. On the twelfth day of the disease the blood gave a Weil-Felix reaction one to 40,000. This was at the peak of the disease, the temperature going to 105 in the afternoon. It rapidly dropped to the sixteenth day when it became normal and remained so.

The outstanding symptoms were:

An acute onset with chill and high fever.

A rash, which disappeared with the temperature.

A peculiar fullness in the head.

Insomnia.

Restlessness.

An unproductive bronchial cough.

Constipation.

Loss of appetite.

No treatment was given except symptomatic consisting of complete rest in bed, denial of visitors, ice cap to head in afternoons and nights, and sedatives.

He returned to work in two weeks after the temperature became normal and has been restored to his normal condition of health.

SUMMARY

My chief excuse for presentation of this paper is:

First, to call attention to the fact that we have the infection in our section, thus making it necessary to have it in mind when called to attend acute febrile conditions.

Second, that it seems to be spreading inland from the coastal regions and is far more widespread and common than might ordinarily be supposed.

Third, the control of this disease is dependent upon the control of rats, or rather the building of ratproof structures, with an attempt to avoid the allowing of rat harbors, and the destruction of those that

are present. Both of my cases occurred up-town about two blocks apart.

In conclusion I quote the final paragraph of Zinsser's illuminating work on Rats, Lice, and History: "Typhus is not dead. It will live on for centuries and will continue to break into the open whenever human stupidity and brutality give it a chance as most likely it occasionally will. But its freedom of action is being restricted and more and more it will be confined like other strange creatures in the zoological gardens of controlled diseases."

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TREATMENT OF CYSTITIS*

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DEGREES OF CYSTITIS.—There are three distinct degrees of pathology in cystitis: catarrhal, purulent, and diphtheritic. Other degrees almost come under a form of gangrenous. Syphilitic, tubercular, and alkaline-incrusted cystitis probably come under one of the above degrees.

In the mildest infections the bladder wall and mucosa become swollen and reddened and a few leucocytes pass through. The urine is alkaline except when bacillus coli is the only infecting agent. The urine will also contain various small amounts of ammonia, desquamated cells, a sediment of phosphates, and mucus. The purulent form is a more intense infection and is characterized by hemorrhages in the mucosa and urine containing pus.

In the diphtheritic form much more extensive hemorrhages appear surrounding the patches of most intense inflammation. In these areas the bacteria are found to have caused a superficial necrosis with the coagulation of a greenish yellow layer of fibrin upon the surface and into the depth of the mucosa. These false membranes break loose with the movement of the bladder and leave an ulcer surrounded by a deep red halo. In old forms of this the bladder wall appears shagged and scarred, the ulcers appear deeper, and necrotic tissue and coagulated fibrin can be seen hanging loose from the ulcerated areas.

It is no surprise that we get pain from the above. The exposed nerve endings are more susceptible to stimuli and the stimuli are intensified. Due to this same process we at first get a contraction of the bladder.

The bladder is able to hold less urine due to stimulation of the nerves for micturition. Consequently we get frequent urination that is painful due to increasing pressure.

When this also affects the trigone and is of long standing or if it is accompanied by

a stasis of urine, there results a hypertrophy of the bladder. Sometimes there is a compensating hypertrophy of the muscular wall, depending upon the age of the individual. In older individuals there is a tendency toward atrophy and diverticula result and also increasing amounts of residual urine. If obstruction was present in the beginning, the obstruction is enlarged and the condition aggravated. On the other hand, it may cause an inflammatory obstruction, which may go over into the chronic form and with healing and scarring may can only be removed by surgical means.

The entrances of the ureters into the bladder are oblique, and any distention of the bladder causes a flattening of the slit-like openings, thus preventing the flow of urine from the bladder up the ureters. Also the ureteral meatus is guarded by a flaplike valve, a fold of the mucosa. This is the normal way of preventing an influx of bladder urine upon filling of the bladder and upon micturition. If, however, the infecting process affects these valves or this part of the wall, there is an influx of urine due to the destruction of the protective mechanism against this. A dilatation of the ureters and kidney would result in two stages. First, in the milder form of cystitis, the ureteral meati would be closed off, preventing the flow of urine from the ureters to the bladder. Second, as the infectious process proceeded with a destruction of that part of the wall, the openings would become patent, and an influx of urine would result from the greater bladder pressure. This urine would be contaminated, and we might expect anything in the kidneys from a mild pyelitis to a hydropyonephrosis.

Unfortunately, the above is often thought of as the whole story of cystitis, and unfortunately it is not. If it were, the treatment would be comparatively simple. True, as is often the case, treatment is given for the relief of painful and frequent urination, and when that objective has been reached no further consideration is given the case.

*Read before the Tennessee State Medical Association, Nashville, April 9, 10, 11, 1935.

From what we are about to say it can readily be seen that this relief can only be transitory and might even be dangerous, compared to giving a hypnotic for the relief of an appendix pain.

A few years ago we wrote a paper on the treatment of cystitis and began it by stating that the title was a misnomer, but that it was used in order to attract the attention of those who held to the view as outlined above. In our experience we have found that cystitis *per se* is a rarity. The reason for this opinion can be seen by the following.

In order to determine the associated pathology in patients complaining of frequent and painful urination, one hundred consecutive cases which gave that as their chief complaint were selected from our files, the ages ranging from twelve to eighty-three years, with an average of thirty-nine years. The average duration of the presenting symptom or from the time that it was first noticed was three and one-half years. Those cases with a previous diagnosis of hypertrophy of the prostate by some other physician are not included.

The pathology in those one hundred cases was about as follows: Pyelitis twenty-eight per cent, eight per cent of which was bilateral; prostatitis fourteen per cent; hypertrophy of the prostate twelve per cent; gonorrhea seven per cent; tubercular kidney seven per cent; stricture of the urethra seven per cent, five per cent male and two per cent female; cystocele six per cent; kinks in ureter four per cent; Hunner's ulcer three per cent; ureteral calculi three per cent; pyonephrosis two per cent; hydronephrosis two per cent; bladder calculi two per cent; kidney calculi two per cent; diverticula two per cent; posterior urethritis two per cent; tabes two per cent; carcinoma of the kidney one per cent; carcinoma of the bladder one per cent; bladder tumors one per cent; granuloma inguinale one per cent; recurrence of prostatic obstructions after prostatectomy one per cent. You will notice that we have given only one associated pathological lesion in each case. This is to be taken as the predominating pathology, for instance, pyonephrosis may be asso-

ciated with ureteral kinks, strictures, bladder calculi, diverticula, obstructions at the neck of the bladder, malformations of the kidney, tumors of the kidney, etc. With the above list of cases you can readily see that there are very few cases of so-called cystitis in which the inflammation can truly be said to be limited to the bladder, in fact, we think we are justified in stating that cystitis very rarely exists except as an associated lesion with other foci of infection of either the urinary or genital tract. The treatment, therefore, in order to obtain results, must be directed to the foci of infection and associated pathology. Why should cystitis exist at all? You will find that where there is stasis in the urinary system there will be infection if the stasis is not relieved. Stagnant urine provides a fertile field for bacteria, and they do not multiply in freely flowing urine. Those of us who do cystoscopic work are familiar with the congested area beginning at the ureteral meatus and extending downward to the trigonal region of the bladder, or trigonitis associated with infection of the lower genitourinary tract. In cases of intramural cystitis there may be a frequency without an associated burning, painful urination being present only when the intramural infection has broken through the mucous membrane and involved that structure.

Those cases of cystitis associated with distant focal infection are likely to be acute or chronic depending on whether or not the foci of infection are acute or chronic. For instance, an acute tonsillitis may be the foci of infection of an acute cystitis. In that case the cystitis would probably only exist as long as the acute tonsillitis was present, while cystitis associated with tubercular conditions of the lungs would be of the chronic variety. The removal of the foci of infection in either of these two conditions should be our aim. It is readily seen that a tonsillitis could be easily remedied by a tonsillectomy, but tubercular infections, as above referred to, bring on a more serious type of cystitis; however, in order to relieve the cystitis the exact predominating foci that are causing the bladder infection have to be removed before the infection will be

relieved. For instance, in the tubercular type, referred to, the involved kidney, prostate, or seminal vesicle will have to receive our attention first, and general remedies recognized as being beneficial to pulmonary tuberculosis will have to be instituted in order to relieve the cystitis of this nature. Upon the removal of a tubercular kidney the tubercular cystitis will, as a rule, be relieved without any further treatment; however, if it is not, there is very little that can be done by local applications to the bladder. We will have to depend upon the constitutional treatments referred to above. With the above outline before us, we can plan our treatment accordingly.

No one would think of treating a disease without knowing the cause. The above statement is laudable. It gives the ideal condition under which we should begin our treatment. Unfortunately, it is frequently a difficult thing to determine. However, palliative treatment will have to be given, at least until an effort has been made to determine the true cause of the disease. It is not to be expected that every true case of cystitis should be subjected to a thorough, painstaking urological examination, but the second attack merits a more thorough investigation, and it should always be advised even though it is necessary to give palliative treatment first. In the beginning we have shown what the local pathological picture is, consequently, palliative treatment is to be given against such lesions. The treatment and response is much like that of a conjunctivitis or stomatitis or any other infection of a mucous membrane.

Diagnosis.—Any attempt to diagnosis should be made after usual examination of urine; a microscopic examination; an examination of the unstained wet preparation; an examination of the stained specimen (Gram). Culture of the urine should be collected in the male, first by cleansing the glands, discard the first up to an ounce voided and make an examination of at least ten cc. Females should be catheterized. The medium used should be an endomedium of bacilli. Glucose, bran, broth, or blood agar for cocci. After the above examination, you are in position to begin your treatment.

Prophylaxis.—Unquestionably, in order to prevent the development of a cystitis, those things bringing on cystitis should receive our attention; however, they are, as a rule, not suspected until the cystitis develops. Cystitis brought on by catheterization following surgical procedures and injuries affords an ample opportunity to proceed in such a manner to avoid cystitis. Ordinarily a simple catheterization of a surgical case will not bring on cystitis, provided aseptic technic is practiced and catheterization is carried out at intervals sufficient to keep the bladder from becoming distended. In order to avoid the latter condition, the practice of catheterization at stated intervals, for instance, every twelve hours, is to be condemned. Catheterization should be practiced in these cases when there appears to be a fullness in the bladder, regardless of the length of time that elapses between catheterizations. A bladder should not be permitted to have over five hundred cc. after once being catheterized. When we do catheterize, it should be done under aseptic technic, taking particular pains to avoid the least amount of trauma to the bladder. The creation of a vacuum in the bladder by withdrawing the contents and permitting the mucous membranes to be aspirated into the catheter is a possible source of trauma to the mucous membranes that is frequently overlooked. This can be avoided by using a two-eyed catheter. This small amount of trauma would be of no importance unless it was necessary to repeatedly catheterize. Each catheterization should be followed by an instillation of one-half ounce of ten per cent argyrol in the bladder.

Treatment.—Stasis should be combated by the necessary surgical procedures. No drug can be expected to have any curative value in urinary infections complicated by stasis. Focal infection should be sought for and relieved, if possible. Naturally it will be necessary to give the palliative treatment while removing the cause of stasis or the site of infection.

In evaluating the worth of any urinary antiseptic, remember that most cases of cystitis have a tendency to a spontaneous cure, and do not think because your patient has

improved that the same drug will cure the second attack.

Cystitis, where there is stasis, will not respond to the temporary relief of stasis only. For instance, cystitis, depending on an obstruction of the bladder neck, would first have to have an indwelling catheter. The same is true in a female when you have a cystocele with retention. It is customary to place an indwelling catheter where you have a prostatic obstruction, also to give large quantities of water, and when I say large quantities I mean around four to six thousand cc. daily. It is the best method of irrigation. It is nature's method and cannot be replaced by any other mode of irrigation. The large quantities of water, however, are not given in these cases primarily because of the cystitis; it is usually because of the associated poor kidney function and the resulting increase of urea. However, when you are giving large quantities of water any urinary antiseptic should be given in proportionately increased doses. Hexamethylenamine, while under ordinary circumstances, would be used in five- to ten-grain doses, every four hours; with an increased fluid output it should be given from sixty to one hundred and twenty grains in twenty-four hours.

Irrigations.—Irrigations in these cases only do good in proportion to the amount of accumulated debris that can be removed by their use. There is no particular reason why you should use an antiseptic solution. Sterile water is as good as any preparation for this purpose. However, the irrigations with certain medicinal antiseptics such as nitrate of silver, boric acid, potassium permanganate and acriflavine are frequently used. Nitrate of silver is undoubtedly one of the best solutions to irrigate with, except in tubercular cystitis. When using potassium permanganate, particular pains should be taken not to leave any of the solution in the bladder. This drug depends for its results on the amount of drug that is deposited on the bladder wall as it is used and not any that might be left in the bladder. A tubercular bladder should never be irrigated, as the overdilatation aggravates the bladder and no good will result.

Instillations.—Silver preparations, such as argyrol and neosilvol, of the milder group can be used as an instillation in strengths of 10-25 per cent, or the stronger silver preparations, such as protargol, in the strength of 2-4 per cent. Mercurochrome in the strength of 1-5 per cent does very little good except where the infection is of the coccus group of bacteria, and in these cases we can always expect very beneficial results. The same is true with acriflavine 1-1000 to 1-500 solution. We frequently encounter cases in which it is absolutely necessary to give the patient something that will give relief. Sometimes the pain from cystitis is so excruciating that even a hypodermic of morphine in very large doses is necessary to control it. However, in that event, we are bringing on a condition that will ultimately end disastrously if the cystitis be of a chronic nature. To avoid the giving of morphine we have found that the use of 1-1000 nupercaine solution as an instillation will bring these cases under almost immediate control and will permit the use of other treatments in the form of instillations and irrigations that otherwise would not be tolerated. It can be repeated as often as necessary; however, each time it is used it should be followed, after effect, by an instillation of a drug that we expect to get some bacteriostatic effect from. The old method of using bichloride of mercury and phenol in tubercular cases has not proved of any benefit in our hands, except the possible anesthetic effect that we get from the phenol. Metaphen in oil, when instilled in the bladder, is not only beneficial as a curative agent, but is soothing to the mucous membranes.

Drugs to Be Administered Orally.—These are many and various types, and the very nature of their multiplicity strongly suggests that as a curative agent they are worth very little. Hexamethylenamine is probably one of the most reliable preparations to use in the bacillary types of infection. The urine should be kept acid in reaction. The acid sodium phosphate in ten-grain doses and ammonium chloride in five-grain doses are probably the best agents to acidify the urine. The combination of

acid sodium phosphate and hexamethylenamine is used in the proprietary preparation. Urophosphates are all right provided the tablets are fresh or have not been exposed to the air. When using the urophosphates, examine the tablets to determine whether or not they are full of little holes or have begun to crumble. If the latter condition exists, it is evident that a chemical change has taken place and that the formaldehyde has been eliminated, rendering them worthless. There are certain proprietary medicines which contain hexamethylenamine that are good in just the proportion of hexamethylenamine contained therein. Urolithia and cystolithia are the two drugs most frequently used. They contain approximately forty grains of hexamethylenamine to the ounce. However, we have noticed that in giving these two preparations a larger amount of hexamethylenamine can be administered than in any other form. It is claimed that this is true because the benzoic acid derivatives are used as acidifying agents. We cannot certify as to the correctness of this statement. The results obtained by them are about equal, and the only advantage we can find is that cystolithia is much more economical to prescribe. Hexamethylenamine should never be used in tubercular conditions nor should it be continued over a long period of time, that is not over one week. If continued any longer, it is likely to become an irritant; and then again it is a good thing to alternate the reaction of the urine after the use of the hexamethylenamine for a week with an alkaline urine. We may want to continue the administration of a urinary antiseptic for the bacteriastatic effect and at the same time render the urine alkaline. Under these conditions, the ordinary bicarbonate of soda, potassium citrate, or most any of the proprietary alkalizing agents can be used. The urinary antiseptic that will act in the alkaline urine is the acriflavine in pills of one-half grain. These pills can be given one or two after meals, and are of no benefit except as given when the urine is alkaline. They are especially to be recommended when the predominating organism is of the coccus group. They should

not be given over ten days. The use of the azo dyes indeed has become quite general during the last few years. There are many of these. Pyridium and serenium are two of the most frequently used; that is, we have had more experience with them. The pyridium can be used in either alkaline or acid urine. The serenium is best used in an acid urine. Hexyresorcinal, or caprikol, is one of the newer preparations; however, its use entails quite an expense, and because of that its use is limited. It will frequently lessen the pain in tubercular cystitis when no other drug given internally is of any benefit. The capsule should be given in doses of one, three times a day after meals, increasing to two capsules after the first-day treatment. Should a diarrhea or any other gastrointestinal disturbance develop the drug can be omitted for one day and then reinstated without any trouble. They are best given in slightly acid urine. In alkaline cystitis, or the so-called incrustated cystitis, it is desirable to produce an acid reaction to the urine, and any of the acidifying agents mentioned above will be sufficient to control this. However, in the use of ammonium chloride in five- to ten-grain doses, it is best to give it in salol-coated capsules in order to avoid digestive disturbances.

Intravenous Injections.—The use of hexamethylenamine intravenously supplied in five cc. ampoules in fifteen- to thirty-one-grain doses, in our opinion, has distinct advantage over any other method of administration. Naturally, we would use our acidifying agents just the same when administering by this method. The arsphenamines in three-tenth-gram doses every four to six days for five or six injections are to be recommended in the coccus group of infections. Mercurochrome in one per cent solution intravenously in ten to twenty cc. doses, every day. We have given it in as much as thirty-five cc., but we think such heroic doses should be avoided if possible because the effect does not justify the risk assumed. We have successfully used mercurochrome in one patient who had one kidney with a large staghorn calculi, the other having been removed because of similar condition. We were able to use it in fifteen cc. of one

per cent solution daily, giving it in one thousand cc. of normal saline. The results were gratifying. From the roentgenographic inspection of this kidney we felt justified in assuming that he did not have more than forty per cent function, and yet the mercurochrome was tolerated exceptionally well.

Vaccines.—Undoubtedly autogenous vaccines are of a great benefit, especially in the coccus group of infections. When having autogenous vaccines prepared an effort should be made to collect the culture from the original source of infection; that is the tonsils, teeth, gall bladder, etc., as well as the specimen from the bladder. They should be grown separately and then combined in necessary proportions. In administering vaccines it is necessary that the dose be estimated from the amount of local reaction obtained. They should be repeated when the local reaction has about disappeared. It may be every day or it may be every four days. We have noticed that when using the autogenous vaccines the local symptoms become aggravated on the first few days of treatment, that is if an arthritis is present as well as a cystitis, all of which is resulting from a tonsillitis, they are increased in severity.

General Care. — Particular attention should be given to the general health of the patient. They should be put to bed and not allowed to be up for anything. You can readily see that, if a stasis is due to malformation of the kidney or blood vessel, rest in recumbent position will assist in removing the stasis. The indwelling catheter above referred to when indicated will put the bladder wall to complete rest and will act as a splint, so to speak. The natural assumption is that in an inflamed bladder wall a foreign body, such as an indwelling catheter, would act as an irritant; but, as a matter of fact, when the bladder is put to complete rest, the relief obtained by this method is sometimes amazing. Even a tubercular bladder will tolerate a catheter and bring on relief where all other methods have failed. The same is true in Hunner's ulcer. Constipation should be corrected. The bacillary type of infection, which as a

general rule is only a complication of the other infection, frequently comes from the colon. Therefore, high colonic irrigations should be given about five days a week. They should be given to affect, not just put so much water in and allow it to run out, but give a thorough, cleansing colonic irrigation.

In cases associated with prostatitis, if it be acute, the prostate should be massaged every second day on a full bladder. These massages should be very gentle and of short duration. They are used principally to increase drainage. If the prostatitis is chronic, the massages can be more vigorous and at longer intervals. Hot sitz baths probably give more relief than anything in this particular type of cystitis. They should be taken in a bathtub or an ordinary wash-tub. The water should be as hot as bearable, and the bath should be of a duration of about twenty minutes twice daily. Only the buttocks should be under the water. The necessary attention should be given to the local site of infection.

Diet.—It is well to avoid all highly seasoned or spiced foods, alcoholic drinks, and carbonate waters. We usually tell our patients to remember that all things going in hot will be hot coming out. Patients with stasis in the colon should avoid foods that have a large residue.

The ketogenic diet has been under investigation. Anson L. Clark gives quite a comprehensive outline of the method of using this diet in the *Journal of Urology*, February, 1934. However, while we will not go into it in detail, we will state that Clark reports Fuller as follows:

"An interesting hypothesis as to the mode of action of this treatment has been contributed by A. T. Fuller, a biochemist of London. He stated that in the course of eight months the diet had been prescribed for some forty patients at the Queen Charlotte's Hospital, most of whom had heavy infection of the urinary tract with colon bacilli or allied organisms. The clinical results, which were very satisfactory, are to be reported in the near future. Fuller found, from careful chemical examination of the urine of patients who were in ketosis,

that the B-oxybutyric acid was the ketone body largely responsible for the bacteriastatic or bactericidal effect of the ketone urine. Diacetic acid and acetone are weaker in their action, and fractional analysis disclosed that they represent only ten to twenty per cent of the ketone bodies, whereas the B-oxybutyric acid makes up from seventy to seventy-five per cent of the ketone bodies in the urine. Fuller's summary is as follows: 'The principal factor in inhibiting the growth of bacteria in the urine from patients receiving the ketogenic diet is levorotatory B-oxybutyric acid. The activity of this substance increases in proportion to the acidity of urine.'"

We have appended to this paper a sample diet for a hundred and fifty-two pound man. Due to its high fat contents, this diet is very unpleasant for the patient, and it is often difficult to obtain the cooperation of the patient, and this is absolutely necessary. To get this cooperation and for assurance of a correct management of the diet, we place our patients in a hospital with a competent dietician. Only under these circumstances were we ever able to obtain any beneficial results.

SUMMARY

1. The pathology in cystitis is universally overlooked in a vast majority of cases. It is readily seen from the one hundred selected cases that in approximately sixty-eight per cent the underlying pathology would actually terminate fatally if left uncorrected.

2. Any hope of a cure must be based on adequate treatment to the underlying pathology.

3. No diagnosis can be arrived at without a cystoscopic and roentgenographic examination.

4. More attention should be given to the prophylaxis in surgical and traumatized patients.

5. Urinary antiseptics are practically useless in the presence of stasis without the removal of the latter condition.

6. Irrigations should be used sparingly and then only for the purpose of removing the debris. No bladder should be distended.

7. More liberal use of local anesthetics,

especially those of prolonged action, should be practiced in preference to giving large doses of opiates.

8. The oral administration of drugs is only good when the proper attention is given to the reaction of the urine.

9. The intravenous hexamethylenamine has a distinct advantage over its oral administration.

10. More attention should be given to the general health of the patient, including rest in bed.

11. Ketogenic diet has an advantage over any other diet that has been used heretofore, if given in short and concentrated courses in preference to a haphazard dietary regime.

KETOGENIC DIET

FIRST DAY

Breakfast

2 eggs
4 full strips bacon
1 glass milk
 $\frac{1}{2}$ cup coffee cream and top milk
 $3\frac{1}{2}$ tablespoons orange juice—add water for drinking
4 teaspoons butter
Coffee (no sugar)

Dinner

$\frac{3}{4}$ average serving meat (beef roast, beefsteak, lamb roast, lamb chop, canned tuna fish)
1 glass milk
 $\frac{1}{4}$ cup coffee cream
 $\frac{1}{4}$ cup greens (turnip greens, mustard greens, spinach, cabbage, kale)
2 teaspoons butter or
6 leaves lettuce
 $1\frac{1}{2}$ tablespoon mayonnaise
2 teaspoons butter to use on meat

Supper

1 cube American cheese (1-inch cube) or
 $\frac{1}{4}$ cake Philadelphia cream cheese
2 eggs or
 $\frac{3}{4}$ serving meat, as at noon
2 tablespoons butter
Either cheese and eggs or meat and butter with the following:
1 glass milk
 $\frac{1}{4}$ cup cream
 $\frac{1}{4}$ cup greens, as at noon
 $1\frac{2}{3}$ tablespoons butter in addition to that with meat or instead of greens and butter
6 leaves lettuce
 $1\frac{2}{3}$ tablespoons mayonnaise

Foods may be combined in any way desired. Do not add any flour, butter, or salt meat in preparation. Cook greens in clear salt water. Cook

spinach without any water at all, just that which hangs to leaves after washing. Water may be added to cream. Cream may be added to milk and used for drinking. Use butter on eggs, meats, and vegetables. Use only the foods suggested.

SECOND DAY

Breakfast

Same as the first day with the following changes: Omit orange juice and add one teaspoon butter.

Dinner

Same as the first day with the following changes: Omit the cream and add one tablespoon butter or one tablespoon mayonnaise.

Supper

Same as the first day with the following changes: Use only one-half the serving of green vegetables or lettuce and round the measurements for butter.

THIRD DAY

Breakfast

3 eggs
4 full strips bacon
 $\frac{3}{8}$ cup coffee cream
 $3\frac{1}{2}$ tablespoons orange juice
1 $\frac{2}{3}$ tablespoon butter
Coffee

Dinner

Full serving meat
 $\frac{1}{2}$ cup coffee cream
 $\frac{1}{4}$ cup green vegetables or
6 leaves lettuce
1 $\frac{2}{3}$ tablespoon butter or
1 $\frac{2}{3}$ tablespoon mayonnaise

Supper

1 cube American cheese as described or
 $\frac{1}{4}$ cake cream cheese
3 eggs with either cheese
or
Whole serving meat
 $\frac{1}{2}$ cup buttermilk
1 rounded teaspoon butter
and
 $\frac{1}{4}$ cup green vegetables
3 tablespoons butter
or
6 leaves lettuce
3 tablespoons mayonnaise
A cup means a kitchen measuring cup.

DISCUSSION

DR. C. F. ANDERSON (Nashville): In the first place, I feel very much like my friend Dr. Barr of this city when he was asked to discuss some paper. He said that he had no discussion because there was nothing in the paper that he could disagree with. With one exception, mainly, I know of nothing that I can disagree with Dr. Roberts in at all, and that is in the title of his paper. The title of his paper is "Cystitis." He does not discuss in the full length of his paper

pure cystitis at all. I do not much blame him for that because cystitis per se is very rare, and when present I know of no one condition that is harder to handle. As a matter of fact, there has been very little done that has been of any particular value in the treatment of cystitis per se. I mean by that the interstitial cystitis of the Mayos and other people who have written on this subject.

The treatment has been of very little value. Of recent years sympathectomies have been done in an effort to try to cure or alleviate the symptoms of this cystitis. This, of course, as you know, is still in the experimental stage; it is a radical procedure and should be resorted to only after every other method has been used to no avail.

Assuming that the doctor has taken up cystitis as a symptom, which he has done very largely, of other conditions in the urological tract, we find very little to disagree with. I think about all I could have to say would be to emphasize just two points that he made in his paper. In his summary he said sixty-eight per cent of the 100 cases that he had analyzed were found to have pathology that would have caused the death of the patient if it had not been relieved. That is a pretty strong indictment which, I think, shows us the gravity of the underlying pathology that all of these patients with the symptoms of cystitis, frequency and burning, with urinary findings, should have a urological examination in order to determine at least some of these underlying things that make up the sixty-eight per cent he found in his cases.

I thoroughly agree with him that a complete, thorough urological study should be made in all these cases. Mind you, I do not mean in the very acute stage in the first few days these symptoms are present, but in the recurrent cases and those that do not respond to treatment, they certainly should have a urological study.

Another point that I think is of importance is this. It is well known that stasis is probably the underlying cause of most of these symptoms. It is fairly well known that the kidney is capable of excreting almost all bacteria, even tubercle bacilli, without causing any disease in the kidney itself. When there is a stasis or an obstruction, these infections will take place, so I think the most important single thing is to find the point of obstruction to the normal outflow or the stasis and have that relieved.

I think the doctor's paper is very full, very comprehensive, and is an excellent paper to be read before a mixed audience of this kind. I certainly appreciate hearing his paper.

DR. J. B. NEIL (Knoxville): I want to compliment the doctor on his paper. He has covered a lot of territory, and I will not attempt to discuss the entire paper. There is just one phase of the subject that I want to discuss, and that is the question of the urethra. For some reason the general practitioner, the surgeon, and a great many urologists seem to have forgotten that a woman

has a urethra. The urethra is only about an inch and a half long, and they cystoscope these women, they find a normal bladder, they find the upper urinary tract normal, and they say there is nothing wrong, possibly the woman has neurasthenia, etc. I had one woman who was diagnosed as a neurasthenic who had a periurethral abscess and a four plus Wassermann.

I do not know whether you know it or not, but median bar occurs in the female. I have had three cases over the last three years in women who had residual urine and all the symptoms of prostatic obstruction. In urethrascopy these women you find hypertrophy of the trigone muscle which has been proven by Frontz in a paper published in the *Journal of Urology* in 1932, "The Significance of Trigonal Hypertrophy." He has shown that when you find hypertrophy of the trigone muscle that positively means obstruction of the median bar type. These women had hypertrophy of the trigone; they had residual urine; they had a building up of fibrous connective tissue at the posterior commissural portion of the internal sphincter, which proved definitely that this was due to a long-standing chronic inflammation of the urethra. These cases were treated exactly the same as you would treat a median bar obstruction in the male, and were positively cured with one treatment.

I saw a woman recently who had been treated for ten years for kidney and bladder trouble. This woman on urethrascopic examination was shown to have an absolutely negative upper urinary tract and bladder. She had cystic changes all around the internal sphincter and stricture of the urethra and was cured with one treatment. All of her symptoms were relieved. The woman has not had a symptom since the treatment.

For that reason, I have made it routine in all cystoscopic examinations of the female to use the urethroscope in all cases, because in my experience it has been so frequently overlooked.

It seems that the doctor in analyzing his hundred cases did not mention urethritis.

Another thing, if you will examine a woman giving a history of burning, frequency of urination, terminal pain, pull open the labia majora, and see polyps at the meatus, or caruncles, as it were, you know positively that that woman has a chronic urethritis, and usually when we slip a urethroscope in we find cystic changes around the internal sphincter.

Surgeons have been removing these caruncles for years. They clip them off expecting to cure them. What is a caruncle? A caruncle is a mucous membrane tumor which is evidence of an underlying fibrosis; it is evidence of an underlying chronic inflammation in the tissues. Cystic changes on any mucous membrane prove to you that there is underlying fibrosis; nasal polyps indicate a long-standing infection in the sinuses, and the same principle holds true in the urethra and bladder. This is a point I want to stress. If urologists will make it routine, they will find a great many of

these cases of chronic urethritis, stricture of the urethra, and this building up process, fibrosis, at the bladder neck. As I say, I have had three cases in women who had this definite picture, and they were cured with one treatment with high frequency current. I thought this picture of median bar vesicle neck obstruction in the female was an original observation, but I find A. I. Folsom of Dallas, Texas, has written an article on the subject.

I enjoyed Dr. Roberts' paper and again wish to compliment him.

DR. H. C. GAYDEN (Nashville): The title of cystitis reminded me of a skin man's paper saying eczema. It is not a diagnosis in itself. We all admit it is secondary to some other cause. I think that is generally accepted. I was impressed by the fact that Dr. Roberts named everything from ketogenic diet to dyes and everything that has been known in the past and present for treatment. That is pretty well admitting that we do not know what to treat it with.

Since we realize that the bladder is divided up into more than one type of mucous membrane, that of the trigone part being a transitional epithelium between the body of the bladder and the mucous membrane of the urethra, we have two distinct types of tissue there to treat.

In doing cystoscopic work, we are impressed with the fact when we first enter the bladder of the difference of the appearance not only of the blood vessels, but the appearance of the inflammation. You rarely see any inflammation in the body of the bladder itself unless it be an extensive case of tuberculosis or, as Dr. Anderson has mentioned, some hard ulcer or some of the other rare types of cystitis. What we usually think of is what we meet in the everyday cases.

I have come, after trying everything that the detail men brought in, to old, time-honored drugs for the treatment of cystitis. You are only doing it for the relief of the patient. I use the old soda bicarbonate because everyone has it handy in the kitchen.

There is a feature that I want to bring out in using soda bicarbonate. They all say drink lots of water. As long as you are using the alkalis, whatever they may be, citracarbonate, or whosever soda it is, you can force fluid all you like and you get an alkalization and relief of the tenesmus. If not, you can switch over quickly to ten drops every four hours or three times a day of sandalwood oil. You are trying only to relieve an aggravating symptom. Until you can work out whether you have a kidney pathology or a gonorrheal urethritis, which is possibly the commonest cause of a cystitis, I think you have settled down to something that you can use.

The one other drug I want to call attention to is urotropin. When we come back and analyze how and why we use urotropin, we use it before the formaldehyde principle is broken up in its metabolism, and it is of no value in a young man

who is completely eliminating that antiseptic, but it is very valuable in a man who has retention, or a woman who has retention from a cystocele. Of course, you have to have drainage. You are going on and correct the pathology, but at the time you are treating the cystitis you want something until you get a complete cure.

As to the ketogenic diet, fat diets, I would like to see some of you eat a quarter of a pound of butter with no bread, and all that kind of thing, or make your patients do it and like it. I have been unable to get any result from ketogenic diets because I cannot get cooperation in the hospital or out of it. You can get it better in the hospital because they have got to eat something while they are there.

I think if we get our drugs down to where we can handle them simply, something easy to remember, something easy for the patient to use, then we have accomplished something in this work.

Dr. Roberts called attention to all of our various types of medication. All have their place. I know of nothing more aggravating to a patient than to put mercurochrome into a raw bladder. It is a mercurial, it is a dye, it penetrates, it stays there, and then you have got to use an opium suppository or paregoric to relieve the tenesmus and straining from the aggravation of the drug that you use.

I have enjoyed the doctor's paper very much.

DR. TOM R. BARRY (Knoxville): Dr. Roberts did not make himself clear as to whether he was discussing chronic or acute cystitis. In the latter, I am sure he does not advocate any type of instrumentation.

He mentioned practically all the drugs which had been recommended as urinary antiseptics. In my opinion, urotropin still stands out as our most useful drug in combating urinary infection. Its use, however, should be limited to chronic types, as it almost invariably aggravates the symptoms of the acute cystitis. I have had nothing but disappointment in the use of the newer dyes. Alkalies are definitely of value in alleviating the pain of acute cystitis. Opium, in my experience, is the only drug which will relieve the intense dysuria and frequency associated with this disease. It acts just as much as a splint to the acute bladder as does plaster to a broken bone.

Not until the symptoms of acute cystitis have subsided should lavage of the bladder be begun.

DR. GEORGE R. LIVERMORE (Memphis): I think the thought we should take with us from this paper is that cystitis itself is not a primary condition brought about either from infection that comes down from a kidney or from infection that comes from the urethra or is introduced from without. In that connection I would like to make the plea that we be a little bit more careful in catheterizing our patients in order not to carry infection into the bladder, because after it becomes a cystitis frequently the infection may be picked up by the blood vessels and the lymphatics, carried to the kidney, and we get a pyelitis from an infection which we ourselves have introduced into the bladder. I have seen so much of this in the hospital where oftentimes catheterization is entrusted to a nurse or to an orderly who is not overparticular in the aseptic precautions that should be instituted. I would, therefore, suggest that when you have this done you insist upon its being done aseptically and that always there be left in the bladder some solution like argyrol, protargol, or something of that sort, to counteract any infection that perhaps may be left in.

It is a very good plan for you too, after the passage of sounds or catheters or any instrument into the bladder, always to introduce afterwards some injection into the bladder to take care of any possible infection that you may have introduced.

DR. G. MADISON ROBERTS (closing): I feel very much honored to have had these men discuss this paper today. I do not think that I will single out any of them and attempt to answer anything that they said except to say that what I read in the body of the paper probably answered most of their criticisms where criticism was in order. First, I used the title cystitis because there are so many physicians who ask me on the street: "How would you treat cystitis?" And the second thing, the reason that I gave so many drugs is because they want to know how to use these various drugs. I did state, though, that those drugs that I mentioned used by mouth were of little value. However, they must have something to give, and for that reason I selected the most economical ones to use.

I do not agree with Dr. Gayden altogether. It is true that we have a certain amount of stasis in the pelvis of the kidney all the time, yet from three to five cc. is normal, and when I referred to stasis I referred to abnormal stasis, and in all probability he does the same.

THE TREATMENT OF EMPYEMA IN CHILDREN*

J. GILBERT EBLEN, M.D., Knoxville

SINCE THE WORLD WAR and the great pandemic of influenza in 1917 and 1918, there has been a rather marked increase in our knowledge of empyema, especially in the treatment. As a natural sequence of our improvement in therapy, there has been a reduction in mortality. Out of this knowledge has evolved a few broad principles that are now quite generally accepted as being proper in the treatment of empyema. They are (1) empyema is rarely, if ever, an emergency; (2) fixation of the chest contents should take place before surgical interference is instituted; (3) many times early surgery adds to mortality. When we go further and ask what method should be used to remove pus from the pleural cavity, we come to the parting of the ways and find many and varied answers to this question. There are perhaps, at present, more different methods advocated to remove pus from the pleural cavity than from any other body cavity.

Mortality rates from every section of the country in large and small series show very little difference, but the reports that accompany these mortalities all advocate a different method of treatment, leaving perhaps considerable doubt as to the proper procedure. For instance, Hart, using his closed method with tidal irrigation, had a mortality of ten per cent in fifty cases of all ages; Binney, using a closed method, reported a mortality of thirteen per cent in all age groups; Hudson reported 12.5 per cent mortality in forty cases treated by rib resection; McEnery and Brennemann had a mortality of nine per cent in thirty-three children treated by repeated aspirations; and Ferguson had a mortality of eleven per cent in thirty-six children treated by closed intercostal drainage. One may find many similar reports. To properly interpret, one should consider many factors such as the type of

organisms, presence or absence of epidemics, whether patients are on surgical, medical, or mixed services, whether they are private, clinic, or mixed, whether deaths from complications are included, age, and general physical condition. Regardless of the methods used the mortality may vary from year to year, showing perhaps that the virulence of the organism plays a most important part. Graham and Berck make the statement that "the variation in the mortalities from year to year shows the futility of basing claims of superiority for a particular method of treatment on only a few cases or even a large series of cases treated over a period of only one or two years." The mortality has always been and still is highest in infants and children, and any great reduction in the general empyema mortality will come from a reduction in the mortality of children.

McEnery and Brennemann reported a mortality of 12.8 per cent with ninety-four cases over a three-year period. Seventy per cent of which were cured by aspiration alone. They attempted to evaluate the rule of aspiration in the treatment of empyema and concluded that aspiration should not be considered the sole routine method of treatment. One of the greatest objections to aspiration has been the plugging of the needle by fibrin. This was not a great factor in this series of cases. Aspiration undoubtedly holds a strong position in the treatment of empyema in children, but the majority of writers maintain that aspiration in itself is not sufficient treatment, and some other form of drainage should be established. Undoubtedly a large number of empyemas, especially those due to the pneumococcus, will respond to aspiration if one is persistent, but this should not cause one to postpone, unduly, further surgery if such is necessary.

Danna writes favorably about aspiration with air replacement. The treatment consists in emptying the empyema cavity of pus, preferably through a large needle, and

*Read before Tennessee State Pediatric Association in Nashville, April, 1935.

gradually replacing it with air as the pus is being removed, the volume of air injected being equal to that of the pus removed. No drain, suction, or irrigation is used. He reports thirty-five cases, and in none has he resorted to any other form of drainage. He also warns that this method requires time and patience and that all cases may not respond to this treatment alone.

Many methods of closed drainage have been described. Bettman describes a simple method of inserting a catheter through a cannula after removing the trocar and using a button to prevent leakage of air about the catheter. The chest is aspirated every three hours, great care being taken to prevent the entrance of air. After each aspiration through the catheter the cavity is irrigated with Carrel-Dakin solution.

McEachern also favors the closed method, using cotton and collodion about the tube to insure airtightness after inserting a catheter through a cannula. Irrigation is used by placing a bottle eighteen inches above the patient's head, and drainage takes place through a series of bottles placed below the level of the patient.

Ferguson states emphatically that closed drainage may be made as simple as aspiration. However, from all reports and judging by the number of methods advocated to keep it airtight, one wonders if the so-called closed method really remains closed. To say the least, it requires rather constant care to keep it closed, and the method is therefore not foolproof as some claim for the open operation. The better results from closed drainage have been obtained where patients are located in well-equipped hospitals and where the apparatus can be constantly watched by experienced hands.

Hart has advocated the use of tidal irrigation and suction by using an apparatus that allows a fluid to run from an outside reservoir into the empyema cavity. He reports a mortality of ten per cent and points out that fluid is drawn into the chest by inspiration and expelled by expiration, and no fluid is run into the chest under pressure. It is satisfactory for patients of all ages and all types of organisms; it works best with a trocar thoracotomy but can be adapted

for use with patients having a rib resection. It is a closed type of drainage. The in-and-out flow of fluid prevents blocking of the tube and clumps of fibrin are eventually broken up. While apparently offering some advantages over other methods of closed drainage, leakage occasionally occurs around the tube, and the apparatus appears to demand rather constant attention.

Reinhoff and Davidson reported a fifty per cent higher mortality in children under two years of age in closed operation than when open operation with rib resection was performed. Graham, Berck, and Mason have recently advocated open operation with rib resection, carried out, of course, at the proper time. On the other hand, Brenemann says, "If after a reasonable time and a reasonable number of aspirations we feel that the course of the disease seems unduly prolonged or uncertain, we resort to open operation with simple incision and tube drainage, only occasionally to rib resection if it seems indicated because of inadequate intercostal space." Open operation is considered more foolproof than the closed type. Simple tube insertion is occasionally inadequate, especially in small infants with diminished intercostal space. Rib resection requires only daily dressings, but bad chest deformities and scoliosis may be the result of extensive rib operations. In inexperienced hands open drainage will perhaps give better results than some complicated closed drainage.

Various solutions have been used to sterilize the cavity, dissolve the fibrin, dilute the pus, replace the pus, and prevent the blocking of tubes and needles. At present Dakin's solution is the most popular and is supposed to dissolve the fibrin masses. In addition, it prevents blockage and to a certain extent aids in diluting thick pus.

While no hard and fast rules can be laid down as to the proper method of treatment to fit every case of empyema, one must be guided by many factors. Pneumococcus infections generally respond better than other organisms, streptococcus varies with the virulence and degree of infection, and staphylococcus with its tendency to abscess formation being extremely fatal in small

infants. It goes without saying that frequent X-rays are invaluable as a guide in the treatment. Generally speaking, a large percentage of cases will respond favorably to repeated and careful aspirations. In experienced hands with constant supervision and hospitalization closed methods will improve. Simple incision and insertion of a tube is the simplest of all methods other than aspirations. Rib resection with open drainage offers the best results in older children and adults.

Each patient is a problem within himself, and perhaps more important than the method used is the ability to judge when to start treatment and when to stop. So long as one follows the now generally accepted principles of thick creamy pus, fixed mediastinum, and remembers that empyema is rarely, if ever, an emergency, one is justified in using any method that in his opinion is most suitable to the individual case. One must be guided by the clinical picture,

toxemia, age, organism, hospital facilities, stage of the disease and past experiences—always keeping an open mind, changing opinions when such is necessary, and hoping that with patience, work, and alertness the future may produce still better methods and possibly some single method that will be generally acceptable.

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H. H. SHOULDERS, M.D., Editor and Secretary

FEBRUARY, 1936

EDITORIAL

THE LIVING ORGANISM OF OUR SOCIETY

Mr. Walter Lippmann made an address before the New York Academy of Medicine in December, 1935, on the subject, "The Living Organism of Our Society."

He was requested to discuss some aspects of the relation between the medical profession and the community. The thoughts and philosophies he brings to bear on this vital theme are of such interest that we believe it of interest to the readers of the JOURNAL. Space will not permit reproduction of this address in full. The full address can be found in the *Bulletin* of the New York Academy of Medicine, December issue.

In his introductory remarks Mr. Lippmann relieved himself of embarrassment with a compliment to the medical profession. The compliment is in the following statement: "But surely, I thought, in a gathering of medical men it will be easy to say candidly that there are aches and ills which flesh is heir to that even the best physician does not understand and cannot cure." "It is a great relief to come from the world of public affairs, where no one dares to admit that he does not know, where no one ever admits that he has made a mistake, where no one ever admits that he is puzzled, into a world where it is respectable and honorable and safe to put aside the pretension of infallibility and of omniscience."

Mr. Lippmann felt at ease among a group of men who make no pretense of being infallible.

Further along he challenges with refreshing logic the false notions and rash assumptions of those who would *plan the medical profession and sick people*. The following statements are examples:

"This notion that society can be engineered, planned, fabricated as if men were inanimate materials becomes in its extremest manifestations a monstrous blasphemy against life itself."

"The man who approaches public life with a feeling for living organisms will not fall into the illusion of thinking he can plan or fabricate or engineer a human society. He will have the more modest aim of defending it against the invasion of its enemies and of assisting it to maintain its own balance."

"Remembering that a society is an association of living persons, and not an arrangement of inanimate materials, he will never imagine that he can impose upon those living persons and their descendants his private preferences. He will recognize that the function of government is not to decide how men shall live, what kind of men they shall be, what they shall spend their energies upon. Government cannot direct the life of a society. Government cannot shape the destiny of the human race."

"There are some who think that government should use all its powers of coercion to make the social order correspond with their own ideal of a nobler and more satisfying social order. But this is as if a doctor dealt with a patient on the assumption that he must use drastic medicine if he finds that his patient is not as strong as Hercules, as beautiful as Apollo, and as wise as Zeus. He would be an absurd doctor. The sound physician, I take it, is not attempting to make a superman out of his patient. He takes measures to protect him against the invasion of hostile bodies. He cultivates habits which improve his resistance. He intervenes with medicines and surgery when he thinks he can assist the patient in recovering his own equilibrium. Always, if I understand the faith of the physician, he regards himself not as the creator, designer, and dictator of the nature

of man, but as the servant and the ally of nature. There are times, to be sure, when his patient is prostrate and the doctor must be the master of his whole regime. But even in these times, the good doctor will be continually seeking for ways, not to make a new man of his patient, but to encourage those recuperative powers which may at last enable the patient to walk again on his own feet."

"There is a vast difference between those who, as engineers dealing with inanimate materials, can dictate to nature and those who, as physicians dealing with living organisms, must respect nature and assist her. My thesis is that statesmen had better think of themselves as physicians who assist society than as engineers who plan and fabricate it. They will understand these problems better if they realize that society has not been invented or constructed by any man or any set of men, but is in fact the result of the infinitely complex adaptations by innumerable persons through countless generations. Its destiny is beyond the power of the human mind to imagine it. Its reality is complex beyond the mind's power to grasp it. Its energies are beyond the power of any men to direct it. Society can be defended. Its adjustments can be facilitated. Its various purposes can be clarified, enlightened, and accommodated. Its aches and pains can in some measure be relieved. But society is not and never will be a machine that can be designed, can be assembled, can be operated by those who happen to sit in the seats of authority."

"To know this, to realize the ultimate limitations of government, and to abide by them, is to have that necessary humility which, though for the moment it is at a discount in many parts of the globe, is nevertheless the beginning of wisdom. Without it men will use political power for ends that government cannot realize, and in the vanity of their delusions fall into all manner of cruelty, disorder, and waste. They will have forgotten to respect the nature of living things, and in their ambition to be as gods among men they will affront the living god. They will not have learned that those who would be more than human end by being less than human."

MEDICAL MEETINGS

Attention should be called to three important medical meetings which are to take place in the South in February and March of this year. They are the Midsouth Postgraduate Assembly at Memphis, February 11 to 14, inclusive; the Southeastern Surgical Congress at New Orleans, March 9, 10, 11; and the American College of Surgeons' Sectional Meeting at Louisville, Kentucky, March 19, 20, 21.

Information in more detail concerning each of these meetings will be found on other pages of this issue.

The information now indicates that each of these meetings will be well worth attending.

THE HEALTH CONFERENCE

Recently there was held in Nashville a conference of health agencies. Some guest speakers from outside the state appeared before the conference. In the main, the attention of the conference was directed at the problems with which these people are in daily contact. This, of course, is as it should be.

Such a conference of health officers can be made very beneficial.

One thing happened, however, which cannot escape notice. According to accounts in the daily press, one of the guest speakers felt called upon to remove the thoughts of the conference from their daily problems and project them into the future by announcing a prediction that some form of state medicine will be in effect in ten years.

There are very few people now who are willing to predict just what will happen two weeks from now. There are wise men, well informed, who cannot predict with any degree of accuracy what the Congress will do in the next two weeks. Anyone who assumes to make a prediction as to what will happen ten years from now certainly has "visions."

We cannot yet conceive just why this guest speaker felt called upon to make the prediction he made. We cannot figure out just what his objective was. He apparently was not urged to make the venture. It was entirely voluntary on his part, according to the news item. There was an inti-

mation in the newspaper account to the effect that, since his prediction is announced, the next order of business for the conference is to begin now to prepare for it—whatever that involves.

Well, let's just throw the prediction away. It is another expression by a delightful professor who has a vision.

This prediction, of course, did not help us in preventing measles, mumps, whooping cough and other diseases to any extent. In fact, it affords no substantial benefit to the conference or the public it serves.

DEATHS

Dr. John H. Revington, Chattanooga; University of Tennessee, College of Medicine, Memphis, 1913; aged 45; died January 27, following a long illness.

Dr. William O. Floyd, Nashville; University of Nashville, Medical Department, 1910; aged 57; died January 12, of pneumonia.

Dr. J. J. Greer, Knoxville; Vanderbilt University, School of Medicine, 1917; aged 43; died January 12, of pneumonia.

Dr. Joe Clifton, Memphis; University of Nashville, Medical Department, 1905; aged 62; died January 26, the victim of a heart attack.

RESOLUTIONS

We, the Nashville Academy of Medicine and the Davidson County Medical Society, are assembled in special session, this January 23, 1936, in commemoration of the character and achievements of one of our members, Dr. William Oliver Floyd, who on January 12, 1936, submitted with characteristic courage and fortitude to the inexorable law of nature, the common law of man, and passed to that "bourn from which no traveler returns."

"Yet not to his eternal resting place

Has he retired alone, nor could he wish

Couch more magnificent. He has lain down
With patriarchs of the infant world—
with kings,

The powerful of earth—the wise, the good,
Fair forms, and hoary seers of ages
past,

All in one mighty sepulcher."

It is but human to mourn the dead. When the messenger of inscrutable Providence unerringly summons one, both near and dear, to fulfil eternal destiny, hearts that remain are bowed down with sorrow and emotion.

Medicine, at first an art, is now an overshadowing science, utilizing the sum total of human knowledge for the alleviation of ills to which human flesh is heir. Those who would successfully serve her must contribute the highest endowments and a consecrated devotion to duty.

Our beloved confrere has rendered signal service in this great field for a quarter of a century. In his blood ran the essence of humanitarianism blended with skill and understanding. To the many, his ministrations dispelled despair and became a beacon of hope and renewed energy.

As a man he lived simply but richly; he thought clearly and without prejudice; he was modest and unostentatious. He served justice and spoke no evil.

He fulfilled to an extraordinary degree those ideals and traditions that are engendered by the sacred institution of home. United in marriage with a loving and devoted helpmeet, surrounded by little ones—he loved children and understood their thoughts so that his heart sang in tender sympathy with them.

A master surgeon once said that he would like to have inscribed on his tombstone, "Here lies a man who loved the truth, and sought to know it." Unknowingly Dr. Floyd has made this his own epitaph, having with gentle hand inscribed it in the hearts and memories of his friends.

The measure of man is the love of his fellow man. The measure of success is service. Lavishly decorated with these virtues, well might he lie down to pleasant dreams.

To us, who remain, a great orator and lover of men, whose silver tongue lies in

dreamless dust, left a sustaining inspiration in these immortal words—

"Life is a narrow vale between the cold and barren peaks of two eternities. We strive in vain to look beyond the heights. We cry aloud—and the only answer is the echo of our wailing cry. From the voiceless lips of the unreplying dead there comes no word. But in the night of Death, Hope sees a star, and listening Love can hear the rustling of a wing."

IN MEMORIAM

The medical profession of Putnam County and this section of the state deeply deplore the sudden death of Dr. W. D. Officer of Monterey, December 24, 1935.

His death came apparently at his greatest period of usefulness at the age of 55, having practiced his profession for 33 years. He received his literary education in Monterey and at Pleasant Hill Academy. He obtained his medical education in the Medical Department of the University of Tennessee and Tulane University. For many years he had conducted a tuberculous sanatorium at Monterey, where patients came from all over the state. He had been president of the Putnam County Medical Society, Upper Cumberland Society, and the Five-County Medical Society. His place in our circle, his seat in our councils is vacant, and only the memory of his general personality remains with us.

To each one of us his death comes as a paralyzing shock, bringing with it a sense of great loss. To those of us who have known him longest and best the blow was the hardest, for we felt that out of our midst had passed a kindly entity upon whom long years of personal friendship and intimate association had taught us to lean and rely, and for us the loss was one that could not be easily supplied.

Each member of the Putnam County Medical Society recognized in Dr. Officer a man of large intellect and wide information, a student and a thinker with a deep

insight into public affairs and the life of the world. In learning and literature of his profession he was well to the front, which was displayed among a large clientele for near one-third of a century. He was a man of tender heart and great kindness, gentle as a child, and easily moved to tears by the sight of helplessness and distress and it goes without saying that not only the medical profession, but the public as well, keenly feel the loss of this eminent physician and Christian gentleman.

Let us close up the gap in our circle as best we can, binding ourselves yet more firmly together to carry on the great work in which he was so greatly interested.

Realizing the above, your committee desires to recommend the following resolutions:

Whereas, This society has lost one of its oldest and ablest members who always upheld its professional ethics and the obligations of membership, being an accomplished gentleman and able physician, surgeon and professional man, able in practice, considerate but positive in consultation, eloquent and logical in debate; therefore, be it

Resolved, That while in death of Dr. Officer, his family has sustained an irreparable loss, he being affectionate, loyal and true to his domestic obligations; yet they have the happy reflection that his life was well spent, he being many years a professed Christian, a member of the Church of Christ; be it further

Resolved, That these resolutions be entered upon the minutes of the Putnam County Medical Society, and a copy be sent to his family, with the deepest sympathy of this society, also a copy be sent the Journal of the Tennessee State Medical Society and the Putnam County Herald.

DR. Z. L. SHIPLEY,

DR. T. M. CRAIN,

DR. J. T. MOORE,

Committee.

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Madison	J. C. Pierce, Mercer	John E. Powers, Jackson	S. M. Herron, Jackson
Maury	E. M. Ragsdale, Columbia	D. B. Andrews, Columbia	C. D. Walton, Mt. Pleasant
McMinn			L. A. Brendle, Englewood
McNairy	John R. Smith, Selmer	G. B. Curry, Selmer	H. C. Sanders, Selmer
Monroe	T. M. Roberts, Sweetwater	J. A. Hardin, Sweetwater	W. J. Cameron, Sweetwater
Montgomery	F. A. Martin, Clarksville	R. M. Workman, Clarksville	Philip Lyle, Clarksville
Obion	W. B. Harrison, Union City	Ilar Glover, Union City	Frank B. Kimzey, Union City
Overton			A. B. Qualls, Livingston
Polk	W. Y. Gilliam, Copperhill	W. C. Strauss, Copperhill	F. O. Geisler, Isabella
Putnam	J. Fred Terry, Cookeville	W. A. Howard, Cookeville	Thurman Shipley, Cookeville
Roane	F. D. Owings, Rockwood	T. L. Bowman, Rockwood	W. W. Hill, Harriman
Robertson	W. F. Fyke, Springfield	E. W. Adair, Springfield	W. S. Rude, Ridgely
Rutherford	J. D. Hall, Readyville	B. W. Rawlins, Murfreesboro	J. A. Scott, Murfreesboro
Scott			D. M. Woodward, Winona
Sevier	O. H. Yarberry, Sevierville	R. J. Ingle, Sevierville	C. P. Wilson, Sevierville
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		R. O. Glenn, Mountain City (Johnson)	
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Weakley	J. A. Moore, Sharon	G. C. Thomas, Greenfield	P. W. Wilson, Dresden
White	S. E. Gaines, Sparta	Vernon Hutton, Ravenscroft	A. F. Richards, Sparta
Williamson	R. H. Hutchinson, Franklin	Knox Galloway, Franklin	K. S. Howlett, Franklin
Wilson	L. L. Tillet, Lebanon	M. H. Wells, Watertown	R. B. Gaston, Lebanon

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 Nashville
 Acting Chairman of Press and
 Publicity-----Mrs. B. F. Byrd
 Nashville

Dear Auxiliary Members:

In these days of snow and ice, the continued frigidity of the temperature and dull winter days, I am sure that you will all be interested to learn something of the plans that are being made for our State Convention in April.

The enthusiasm of Mrs. Reaves and her committees and the plans that are being formulated for our pleasure, comfort and the expedition of business at our annual meeting assure us of a successful meeting, and a wonderful time in the Bluff City.

The copies of the proposed Constitution have been sent to our Advisory Council for their suggestions and approval by the Revision Committee. Also, copies have been forwarded to members of our State Board, conforming to the sixty-day notice required by the Constitution before the date set for our annual board meeting in April.

It is very gratifying that we have made much progress in Auxiliary work although the winter has been a most severe one, and one of much illness among the membership throughout the state. With the coming of spring, let us renew our aspirations and enter enthusiastically into preparations and plans for the new year of Auxiliary work.

Through next month's Journal we hope to give you more in detail of the plans for the Memphis meeting, and it is our hope that many of you will be able to attend and make it our greatest convention.

RUTHERFORD COUNTY

Members of Stones River Academy of Medicine were hosts to the Woman's Auxiliary at a luncheon given at the James K. Polk Hotel in January. Dr. J. R. Gott was

master of ceremonies. The guest speaker was Dr. T. R. Ray of Shelbyville, who combined technical data with humor and tribute to the Auxiliary members in his talk. Mrs. Matt Murfree is president of the Auxiliary, and in a very gracious way expressed the appreciation of the Auxiliary members for the courtesy.

KNOX COUNTY

Some of the high lights of Knox County Medical Auxiliary during 1935: Gratifying increase in membership; important changes in the Constitution; contribution to advancement of health and education, their prime objective in continuation of the prenatal instruction classes in the charity clinic at Knoxville General Hospital—at each meeting the program chairman arranged to have a member of the Knox County Medical Society speak to the Auxiliary for the enlightenment and instruction of its own membership; endorsement of Shepherd Bill and generous contributions from the treasury and members to further work for the blind of Knox County; widening their scope of influence as an auxiliary in loaning audiometers for use in surrounding towns; holding joint meetings twice during the year with the Knox County Medical Society by invitation—in March the Auxiliary was guest of the Medical Society at a dinner given at the Andrew Johnson Hotel, again in November, with the Auxiliary providing the speaker, Mrs. Bonar White, of Atlanta; a number of social functions, including teas, picnics, and luncheons, at which time surrounding counties were invited to send representatives as a gesture toward promoting an organization in East Tennessee; and, helped in organizing two new counties—Blount and Anderson. Mrs. Dewey Peters is the new president.

SHELBY COUNTY

Dr. Carrol Turner addressed the membership of the Woman's Auxiliary to Memphis and Shelby County Medical Society, at its regular meeting held at University Center, January 12, 1936. Dr. Turner's topic was "The Need for a Charity Hospital for Men-

tal Patients in Memphis." Mrs. W. S. Lawrence, president, presided.

Davidson County Auxiliary members are joined by Auxiliary friends of Mrs. W. O. Floyd throughout the state in surrounding her with their sympathy in this time of bereavement. In this great sorrow she was upheld not only by the sympathy of her many friends, but deeply moved by signs so full and touching that the passing of Dr. Floyd brought a sense of personal sorrow to all who knew him.

In the death of Mrs. Adam G. Nichol, who died January 14, 1936, Davidson County Auxiliary lost one of its charter members.

PRAYER

"Thy will be done.

But, Oh God!

Help us to pick up the bits

Of broken plaster,

That once were our lives,

And put them together

With love and truth;

So that we may stand alone,

Tall and strong!"

NEWS NOTES AND COMMENTS

Drs. C. C. McClure and L. M. Lanier announce the addition of a special super-voltage X-ray therapy apparatus, 400,000 volts, for the specialization in the treatment of malignancies, located at 404 Doctors Building, Nashville.

MEDICAL SOCIETIES

Carroll, Henry, and Weakley:

The Tri-County Medical Society met January 15 in McKenzie and was addressed by three Nashville physicians. Dr. L. W. Edwards discussed "Cancer of the Colon and Rectum." Dr. W. B. Anderson, "Analgesics in Obstetrics," and Dr. Jack Wither-
spoon, "Diseases of the Esophagus."

Carter County:

Members of the Carter County Medical Society assembled January 27 at the home of Dr. E. T. Pearson, Elizabethton, for their regular monthly dinner and business session. Those present were Drs. E. L. Caudill, J. B. Shouns, Paul S. Williams, H. B. Damron, W. G. Frost, Owen F. Agee, Charles Baughman, and E. T. Pearson.

Cocke County:

Members of the Cocke County Medical Society enjoyed their annual banquet January 15 at the Rhea-Mims Hotel, Newport. The full membership was present and the occasion proved quite an enjoyable one. Questions of interest to the profession were discussed and the general welfare of the community from a standpoint of health came in for discussion. The new president of the society, Dr. Drew A. Mims, acted as chairman and toastmaster. A delectable menu was served, and since the event the medicos have been talking of the great time they had at this year's annual banquet.

Davidson County:

January 14—"Typhus Fever with Report of Cases," by Dr. J. P. Keller. Discussion opened by Dr. J. O. Manier.

January 23—A memorial was held for the late Dr. W. O. Floyd.

January 24 — "Treatment of Athetosis and Other Disorders of Movement," by Dr. Tracy Putman, Professor of Neurology and Neurosurgery at Harvard Medical School.

January 28 — "Vasectomy in Cases of Prostatic Enlargement and Presentation of a New Catheter," by Dr. J. C. Pennington.

"The Indwelling Urethral Catheter," by Dr. E. C. Lowery. Discussion of both papers opened by Dr. C. F. Anderson.

February 4—"Comparison of Hysterectomy and Radiation Therapy in Fibroid Tumors of the Uterus," by Dr. C. S. McMurray. Discussion opened by Dr. D. C. Seward and Dr. H. S. Shoulders.

February 11—"Hyperthyroidism Masked as Heart Disease," by Dr. Sam Levine of Harvard Medical School.

Dyer, Lake, and Crockett Counties:

The Dyer, Lake, and Crockett County Medical Society met in regular monthly session February 5, 1936.

Scientific program — "Bilateral Malignancy of Ovaries" (Case report)—Dr. John Frazier, Newbern.

"Empyema in Children with Motion Pictures"—Dr. J. W. Bodley, Memphis.

"Diagnosis and Management of Acute Circulatory Failure" — Dr. O. S. Warr, Memphis.

C. L. DENTON, *Secretary*.

Gibson County:

The Gibson County Medical Society held its regular monthly meeting on January 27. Drs. G. H. Berryhill and C. F. Webb of Jackson presented papers.

Hamilton County:

January 9—"Insanity in Relation to Crime," by Dr. J. C. Eldridge. "Brain Complications Following Otitis Media," by Dr. Stewart Lawwill.

January 16—"The Production and Clinical Application of Insulin," a seven-reel sound picture.

January 23—"The Diagnosis and Treatment of Strabismus," by Dr. A. H. Benz.

January 30—"Volvulus of the Colon," by Dr. H. H. Hampton.

February 6—"A Plea for an Earlier Diagnosis in Appendicitis," by Dr. J. B. Haskins. "The Management of the Ruptured Appendix," by Dr. J. M. Higginbotham.

February 13—"Rate of Growth Before Birth," by Dr. E. F. Buchner.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

The Five-County Medical Society met on January 28 at Waynesboro. This was a splendid meeting with a good attendance and fine interest, notwithstanding zero weather.

1. Invocation, by Rev. Cantrell.

2. President's address, by Dr. W. E. Boyce, Flatwoods, "Digestive and Metabolic Upsets Due to Food."

3. Dr. John Overton, Nashville. Subject, "Work Done with B. C. G. Vaccine in Tuberculosis." Discussion opened by Dr. W. B. Danley, Lawrenceburg.

4. Dr. Phil C. Schreier, Memphis. Subject, "Differential Diagnosis of Uterine Bleeding." Discussion general by all present.

O. H. WILLIAMS, *Secretary*.

Knox County:

January 14—"A Symposium—How to Remedy the Present Status of Unwarranted Malpractice Suits," by Drs. Charles F. Clayton and S. R. Miller. Discussion led by Drs. Philip Thomas and Robert Paterson.

January 21—"Hypertension," by Dr. E. P. Nicely. Discussion led by Drs. Pope, Rule, Guynes, and R. B. Wood.

February 4 — "So-called Subacromial Bursitis," by Dr. A. L. Rule.

Roane County:

The Roane County Medical Society met January 21. Those attending were: Drs. Roberts and Fly of Kingston; Drs. Wilson, Phillips, and Owings, of Rockwood; and Drs. Neergaard, Bowman, Killeffer, and Hill, of Harriman.

Dr. Thos. L. Bowman read a paper on "Infections of the Hand." Dr. Thos. H. Phillips opened the discussion.

Some interesting cases were reported.

The next meeting will be held February 18.

Sullivan-Johnson County:

January 8—"The Significance of Headache," by Dr. J. V. Hodge. Discussion opened by Drs. Thos. T. McNeer and Dr. E. M. Corns.

"The Effects of Eyestrain," by Dr. V. M. Cox. Discussion opened by Drs. W. A. Wiley and A. B. English.

February 5—"Pleural Emphyema," by Dr. Harry Bachman. Discussion opened by Drs. A. K. Turner and W. A. Wiley.

"Hernia, with Motion Picture (Hernioplasty)," by Dr. C. F. M. Schram. Discussion opened by Drs. W. H. Reed and Thos. T. McNeer.

Washington County:

Members of the Washington County Society held their first meeting of the New Year on January 2. Dr. John L. Hankins presented a paper on "Neuritis." Discussion opened by Drs. Brading and Kennedy.

Dr. H. L. Monroe discussed "Puerperal Infections." Drs. Friberg and McCollum opened the discussion.

OTHER MEDICAL SOCIETIES

**PROGRAM OUTLINE OF THE SOUTHEASTERN
SURGICAL CONGRESS, NEW ORLEANS
ASSEMBLY, MARCH 9-11, 1936,
FOLLOWING MARDI GRAS**

If you have never attended one of these assemblies you have missed something. The New Orleans Assembly should be the best one. Don't miss it. Three full days. Something doing every minute. Midday round-table discussions. Night session Monday. Banquet Tuesday.

The following men will appear on the program with papers and clinics:

Dr. Arthur W. Allen, Boston, Mass.; Dr. Roger Anderson, Seattle, Wash.; Dr. Charles O. Bates, Greenville, S. C.; Dr. Guy Caldwell, Shreveport, La.; Dr. Thomas E. Cormody, Denver, Colo.; Dr. Virgil S. Counseller, Mayo Clinic; Dr. George W. Crile, Cleveland, Ohio; Dr. Roger G. Doughty, Columbia, S. C.; Dr. John F. Erdmann, New York, N. Y.; Dr. Edgar Fincher, Jr., Atlanta, Ga.; Dr. Paul G. Flotow, Seattle, Wash.; Dr. Emmerich von Haam, New Orleans, La.; Dr. W. D. Haggard, Nashville, Tenn.; Dr. Arthur Hertzler, Halstead, Kan.; Dr. Gerry Holden, Jacksonville, Fla.; Dr. C. C. Howard, Glasgow, Ky.; Dr. Chevalier Jackson, Philadelphia, Pa.; Dr. Harry H. Kerr, Washington, D. C.; Dr. Joseph E. King, New York, N. Y.; Dr. Francis E. Lejeune, New Orleans, La.; Dr. Jennings Litzenberg, Minneapolis, Minn.; Dr. James S. McLester, Birmingham, Ala.; Dr. Julian A. Moore, Asheville, N. C.; Dr. Fred Rankin, Lexington, Ky.; Dr. J. U. Reaves, Mobile, Ala.; Dr. Curtice Rosser, Dallas, Texas; Dr. Alfred A. Strauss, Chicago, Ill.; Dr. A. Street, Vicksburg, Miss.; Dr. J. W. Tankersley, Greensboro, N. C.; Dr. Alan C. Woods, Baltimore, Md.

If you do not receive a program by the first of March write for one to Dr. B. T. Beasley, 478 Peachtree Street N. E., Atlanta, Georgia.

AMERICAN COLLEGE OF SURGEONS' SECTIONAL MEETING AT LOUISVILLE, KY.,
MARCH 19-21, 1936

The American College of Surgeons' 1936 Sectional Meeting in Louisville, Kentucky, will be held on Thursday, Friday, and Saturday, March 19, 20, and 21. Headquarters will be at the Brown Hotel.

Participating states: Kentucky, Illinois, Indiana, Ohio, West Virginia, Virginia, Tennessee, and Missouri.

An active Committee on Local Arrangements, with Dr. Barnett Owen as chairman and Dr. Frank P. Strickler as secretary, have plans well in hand for an excellent meeting.

Following is a preliminary outline of the entire program:

Thursday, March 19, 1936

- 8:00- 6:00—Technical and Educational Exhibition
- 8:00- 9:00—Registration
- 9:00-12:00—Operative Clinics
- 9:30-12:00—Hospital Conference
- 12:00- 2:00—Medical Motion Pictures
- 2:30- 5:00—Hospital Conferences
- 5:00- 5:30—Annual Meeting, Fellows of the College
- 6:30- 8:00—Dinner
- 8:00-10:30—Scientific Session, General Surgery
- 8:00-10:30—Scientific Session, Eye, Ear, Nose, and Throat Surgery
- 8:00-10:00—Hospital Round-table Conference

Friday, March 20, 1936

- 8:00- 6:00—Technical and Educational Exhibition
- 9:00-12:00—Operative Clinics
- 9:00-12:00—Hospital Conference
- 12:00- 2:00—Medical Motion Pictures
- 2:00- 5:00—Hospital Conference
- 2:30- 5:30—Scientific Session, General Surgery
- 2:30- 5:30—Scientific Session, Eye, Ear, Nose, and Throat Surgery
- 8:00-10:00—Community Health Meeting

Saturday, March 21, 1936

- 8:00- 4:00—Technical and Educational Exhibition
- 9:00-12:00—Cancer Clinic
- 9:00-12:00—Fracture Clinic
- 9:00-12:00—Operative Clinics, Eye, Ear, Nose, and Throat Surgery
- 12:00- 2:00—Medical Motion Pictures
- 2:30- 5:30—Scientific Session, General Surgery
- 2:30- 5:30—Scientific Session, Eye, Ear, Nose, and Throat Surgery

Some of the distinguished visitors who will be present on this occasion are: Dr. George Crile, Cleveland, Chairman, Board of Regents, American College of Surgeons; Dr. A. W. Adson, Rochester, Neurosurgeon, Mayo Clinic; Dr. Frank H. Adair, New York, Attending Surgeon, Memorial Hospital; Dr. Chas. L. Scudder, Boston, Consulting Surgeon, Massachusetts General Hospital; Dr. Frederic W. Bancroft, New York, Associate Professor of Clinical Surgery, Columbia University College of Physicians and Surgeons; Dr. Francis L. Lederer, Chicago, Professor of Laryngology, Rhinology, and Otology, Head of the Department, University of Illinois College of Medicine; Dr. Michael L. Mason, Chicago, Assistant Professor of Surgery, Northwestern University Medical School; Dr. Frederic A. Besley, Waukegan, Professor of Surgery, Northwestern University Medical School; C. C. Little, Sc.D., New York, Managing Director, American Society for the Control of Cancer; Dr. M. T. MacEachern and Dr. Bowman C. Crowell, Chicago, Associate Directors, American College of Surgeons; and Robert Jolly, Houston, Superintendent Memorial Hospital and past President American Hospital Association.

A cordial invitation to attend this most interesting meeting is extended, not only to the fellows and hospitals of the various states included, but to the entire medical profession at large.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Long Anesthesia with Nitrous Oxide and Oxygen.
K. C. McCarthy. *Current Researches in Anesthesia and Analgesia*, September-October, 1935.

To combat statements that prolonged anesthesia with unsupported nitrous oxide and oxygen is dangerous, the author presents some tables and statistics to prove the contrary.

In a series of one hundred and fifty-three operations lasting two hours or more there was a mortality of 9.1 per cent. No attempt was made to differentiate between death caused by anesthesia by surgery or due to the original pathology. The death rate following nitrous oxide and oxygen anesthesia was 6.9 per cent and following administration of all other agents was 11.9 per cent.

It was found that long operations show an increased mortality rate. Long laparotomies have a higher death rate, but this high death rate is not increased when nitrous oxide and oxygen are used. Nitrous oxide is not inferior to ether or ethylene.

DERMATOLOGY

By E. E. BROWN, M.D.
Doctors Building, Nashville

Roentgen Dermatitis Treated with Fresh Whole Leaf of Aloe Vera. C. E. and Creston Collins, M.D.
American Journal of Roentgenology, March, 1935.

The authors report the case of a woman who had a severe X-ray dermatitis. There was scaliness of the left side of the face, scalp, and forehead following an epilating dose of X-ray given in May, 1932. The condition resembled an exfoliating dermatitis, but was present only on the skin receiving the X-ray treatment. Various local treatments were tried, but no relief was obtained. The exfoliation and itching were quite annoying.

Applications of the whole leaves of Aloe Vera were used to allay itching and burning. This ceased in twenty-four hours and within five weeks there was complete regeneration of the skin with no scarring or loss of sensation. There was also a return of the hair.

The leaf contains a gelatinous material which may be extracted by cutting in strips and macerating. This jellylike substance is applied locally while fresh and is then covered with waxed paper. In a few hours it becomes dark and gummy, and it is then removed with warm water

(no soap). It may be reapplied as often as desired.

Note: As we have been able in the past to do so little for this condition, I would think this treatment is worthy of a trial.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 316 Doctors Building, Nashville

Cheatam, G. R., and Peck, A. E. The Injection of Varicose Veins During Pregnancy. *A. J. of Obs. and Gyn.*, 30: 3, 392-395, September, 1935.

This is a preliminary report of work done in the Endicott-Johnson Medical Service and Ideal Hospital Endicott, New York, with two aims in view, namely (1) to prove the injection of varicose veins during pregnancy is safe anytime anywhere and (2) to arrive at some definite conclusions concerning which veins should be injected and which should be left alone. Varicose veins from the ankle to Poupert's ligament, both superficial and varices so extensive that the patient was forced to bed, were injected with sodium morrhuate. The average dosage was three cc. and from one to seven injections were carried out. A series of twenty-four pregnant women (three primiparas) were treated, every patient being relieved with only one uneventful bad local reaction. Their ages ranged from eighteen to thirty-seven years and treatment was instituted from the fourth to the eighth month of pregnancy.

No post-partum complications which involved the circulatory system were reported and the length of hospitalization was not increased. The authors proved to their satisfaction that this is a safe procedure, but due to the refusal of 479 patients in the same period they were unable to make any conclusions concerning which veins should be injected.

Pemberton, Frank A. Resection of the Presacral Nerve in Gynecology. *New England Jour. of Med.*, 213:15, 710-714, October, 1935.

A study of work done at Harvard Medical School, Department of Gynecology, for relief of pain in dysmenorrhea, malignant disease in the pelvis, and idiopathic pain is reported. Clinical reports offer no good explanation of why presacral resection should be as effective as it is.

In essential dysmenorrhea all methods of treatment should be resorted to before an operative procedure is done. However, if the patient has reached full growth; that is, the age of twenty-one, it is useless to temporize with only a dilatation and curettage and both procedures should be carried out.

Lately, resection of the nerve in advanced malignancy of the pelvis has been discarded because the injection of alcohol into the spinal canal has been very satisfactory. There seem to be no per-

manent deleterious effects caused by the operation, no effect on childbirth, no change in normal menstrual cycle, but menstruation that has been scanty or profuse usually returns to normal. De Courcy, Greenhill, Counsellor, Craig, along with many Europeans, have written satisfactory reports of this operation.

Forty-one cases are reported, twenty done by various members of the staff and sixteen by the author in his private practice. Fifteen patients averaging twenty-one years of age had essential dysmenorrhea. Feeling that everything possible should be done to alleviate pain, all but one of this group had a suspension of the uterus along with dilatation curettage and presacral nerve resection. Twelve of these patients were relieved, one had partial relief and two had no relief.

Dilatation of the cervix alone gives relief in fifty per cent of cases, while dilatation and suspension gives relief in sixty-five per cent. The author shows eighty per cent of his cases relieved of pain, therefore, neurectomy is of distinct benefit.

Presacral neurectomy was used as an adjunct in treating dysmenorrhea due to pathological changes in the pelvis in eighteen patients. This group had previously had conservative types of operations of various nature. Eleven were relieved entirely, four partially, and there were two failures. The type of operation done on these patients varied so much that it would be difficult to draw any definite conclusions.

The operation has been employed in four patients with widespread cancer originating in the cervix without success. Injection of alcohol into the spinal canal to destroy the sensory roots has been very successful in alleviating pain for these individuals.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

Infantile Glaucoma. J. F. Hardesty. Archives of Ophthalmology, January, 1936.

Hardesty reports the case of a two-month-old baby in which a diagnosis of interstitial keratitis was first made, but later changed to one of glaucoma, the tension of both eyes being fifty. The baby's eyes improved under miotics and roentgen treatment of the thymus. In a second case of infantile glaucoma with tension persistently from forty-five to fifty-five and with marked vagotonic manifestations, suggesting hyperactivity of the thymus, there was general as well as ocular improvement under ephedrine, 1/8 grain (0.008 gm.), three times daily. He concludes that it is wise in cases of infantile glaucoma to consider the possibility of thymic hyperactivity.

PEDIATRICS

By JOHN M. LEE, M.D.
Doctors Building, Nashville

Treatment of Acute Nephritis in Children. C. Anderson Aldrich, M.D. The Jour. of the Iowa State Med. Soc., September, 1935.

This is a discussion of acute nephritis that occurs in children following acute infections. In the prevention of this condition, rest, adequate fluids, avoidance of chilling, and all measures to shorten the febrile period are important. It is doubted if alkalies have any prophylactic value, nor is it proven that high protein intake during scarlet fever causes nephritis.

Foci of infection should be removed or drained where possible. Sodium salts are restricted because of their tendency to favor edema. Water is given freely, even to edematous patients, but subcutaneous saline solution should not be given. The giving of adequate fluids dilutes toxin and provides the vehicle for its elimination. It is felt that it is dangerous to withhold fluids from these patients. Diaphoretics, hot packs, sweating, and drastic cathartics are ineffectual in the most critical stages.

The harm from protein during the disease is questioned, but salt is omitted in the presence of edema. The author uses only three drugs, acetylsalicylic acid for symptomatic relief, potassium citrate as a harmless alkali, and magnesium sulphate in large doses for relief of cerebral symptoms. The patient should be warmly dressed, isolated from infectious patients and kept in bed until all symptoms and pathological signs have disappeared.

Cerebral complication or cerebral edema, misnamed uremia, is the most severe toxic manifestation to which nephritic patients are subject. Adequate fluid intake will reduce the number of such attacks. It is felt that the usual dehydrating measures combined with fluid restriction tend to increase rather than lessen the toxic manifestations and are responsible for many uremic attacks. A daily blood pressure reading is advised because "you will 'always' have an increase in blood pressure before an attack of these cerebral symptoms in acute nephritis. I have never seen it to fail."

If in spite of adequate fluid intake the blood pressure rises, magnesium sulphate in fifty per cent solution is given by mouth in doses of from one to several ounces daily until the blood pressure is normal and the symptoms do not tend to recur. In edematous patients massive doses of magnesium sulphate cause remarkably few stools, doses of from five to eleven ounces a day failing to produce loose stools.

If the patient is vomiting or comatose, two per cent magnesium sulphate solution may be given intravenously, slowly, two to three cc. per minute.

while taking frequent blood pressure readings, stopping the injection when the blood pressure approaches normal. Usually this results shortly in such improvement that fluids and magnesium sulphate may be given by mouth as above. In urgent cases, quicker results may be obtained by giving hypertonic glucose solution intravenously, but its effect is not so prolonged as is the effect of magnesium sulphate. Favorable results have been obtained with the technic of Blackfan and McKahn, who advise the injection of from two to six cc. of fifty per cent solution of magnesium sulphate deeply into the muscles every few hours according to the symptoms and the blood pressure. The intramuscular method is simpler in technic and safer, but is slower in effect.

The theory of the *modus operandi* of the above method of treatment is fully discussed.

SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.
1400 Monroe Avenue, Memphis

Stage Operations in Hyperthyroidism. Frank H. Lahey, M.D. Surgical Clinics of North America, December, 1935.

Previous to the time of Lugol's solution, pole ligations and two stage hemithyroidectomies were done much more frequently than now. However, multiple-stage operations are still necessary. There has always been a question in the minds of some men as to whether or not preliminary pole ligations actually accomplished any real good. Because of this 119 cases of pole ligation were reviewed to determine the beneficial effects.

In two-thirds of the cases there was a definite gain in weight, a drop in pulse, and a lowering of the basal metabolism. These ligations, done in cases where a fatality was considered a possibility, are still considered desirable preliminary measures in some cases.

Hemithyroidectomy is done much more frequently than pole ligations, and there is never any doubt in the mind of the author as to its efficacy in the cases where it is used. Six weeks is the usual time between the two operations and frequently after one lobe has been removed, marked improvement has been noted and a gain of twenty pounds in weight, and almost complete abatement of the symptoms of hyperthyroidism. The second operation, however, should always be done to prevent a recurrence of the symptoms, for the operation is much more serious when there is a recurrence.

It is difficult to put down set rules for the indications for multiple operations, and there is no substitute for a large background of experience. In the author's clinic, when the patient is first seen, the observer records his impression as to whether or not he or she will require a multiple-

stage operation. Thus the patient is seen at his or her worst, before the preoperative preparation has begun to reduce the symptoms of toxicity, which may be misleading in the decision for or against multiple-stage operation.

In true exophthalmic goiter the mortality is lower than in toxic adenomata. Apathetic goiter is frequently an indication for multiple-stage operations. This type usually occurs past middle life. Other indications for multiple-stage procedures are weight loss during hospital preparation, rising pulse rates, and diarrhea or vomiting during the preparation. During the operation, if there is a progressive rise in pulse rate, the procedure should usually stop when a hemithyroidectomy is done. Sometimes though, after the induction of the anesthesia, the pulse rate will become lower.

An increased pulse pressure is frequently an indication for a multiple-stage procedure. When there has been excessive bleeding during the operation it is often wiser to stop after a hemithyroidectomy has been done and complete the operation after about six weeks' time has elapsed. If the trachea is injured during the first stage, it should be given time to heal before the second stage is done.

In the author's experience, whenever multiple-stage procedures are cut down in their percentage, the mortality rises.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.
By G. A. WILLIAMSON, JR., M.D.
Medical Building, Knoxville

Unusual Conditions Simulating Perinephric Abscess with Report of Ten Cases. C. F. Rusche and S. K. Bacon. J. Urology, December, 1935.

Modern urology has at its command a multitude of instruments of precision for diagnostic purposes. However, the diagnosis of perinephric abscess is a problem which often overtakes the ability of the urologist. Confusion is more commonly due to diseases that involve structures adjacent to the kidney area, although many perinephric abscesses fail to disclose the commonly accepted clinical signs.

The clinical symptoms and signs in this condition are: Possible history of subcutaneous furunculosis, pain and tenderness in the costaliliac space, fever, leucocytosis, varying amount of fixation of the thigh due to reflex contracture of the psoas muscle, only a few pus cells and usually staphylococci in the urine. X-ray examination usually shows lateral deviation of the spine away from the affected side with consequent narrowing of the costaliliac space, obliteration of the psoas shadow, and opacity in the retrorenal space.

The difficulty in establishing a conclusive preoperative diagnosis of perinephric abscess is

shown by the fact that such abscesses have been found when the above signs and symptoms were absent. Many times abscesses have not been found when the signs and symptoms were present, and other cases with disease involving structures adjacent to the kidney have presented all the signs and symptoms of perinephric abscess.

They report ten cases. All had many or all of the usual cardinal signs and symptoms. The preoperative diagnoses were perinephric abscess, and they were all operated for this, with one ex-

ception. The final diagnosis in these cases were: Two appendiceal abscesses, one osteomyelitis of rib, one osteomyelitis of rib and vertebrae, one osteomyelitis of vertebra, one ruptured hydro-nephrosis, one ruptured abdominal aortic aneurysm, one retroperitoneal abscess containing a toothpick, one retroperitoneal abscess following perforation of a cancerous bowel, one no pathology was found.

These authors feel that early exploratory operation in suspected perinephric suppuration is a rational and justifiable procedure.



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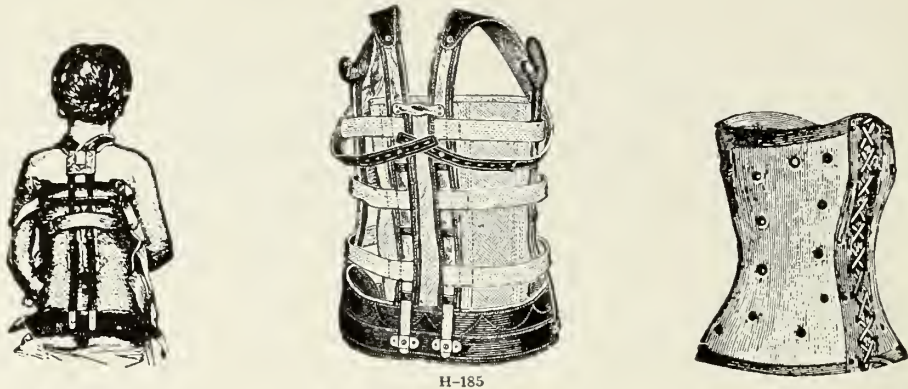
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LOBAR PNEUMONIA IN CHILDREN*

O. H. WILSON, M.D., Nashville

THE OLD TEACHING that lobar pneumonia is a rare disease in children has been proven untrue. If the pneumonias secondary to whooping cough and measles are excluded, the lobar is just as frequent as the broncho type.

The anatomy of the lung of the child shows more bronchiole than vesicular structure, which produces a peculiar type of breathing known as puerile breathing, a mixture of bronchial and vesicular, sometimes quite difficult to evaluate for one who is accustomed only to examining adults. Again the mucosa of the bronchiole is more vascular and more loosely attached, so that any irritation causes more swelling and greater disturbance of respiration.

The pathology is the same as in adults except progress is slower, probably due to better vascular supply. The process practically always begins on the surface. Central pneumonia is a very rare condition.

When an adult contracts pneumonia, he has a chill, fever, pain in the side, and cough. He goes to bed, sends for the doctor, and tells him he has pneumonia, self-diagnosed, and this is rapidly confirmed by the appearance of bronchial breathing and the ordinary physical signs and rusty sputum. In a child it is a different story. Usually a strong child is taken suddenly sick, a chill is rare, convulsions rarer; there is

vomiting and high fever. Pain is absent, indefinite, or referred to the abdomen. Cough is absent or very slight. There are no rales, or if any happen to be present they are usually tracheal. In fact, no ordinary physical signs exist. There is possibly an expiratory grunt, flushed cheek, and dilating alae nasi. But he is a sick child, getting sicker every minute. What is it? Pneumonia, otitis, appendicitis, scarlet, pyelitis, malaria, or shall we throw it into the trash basket and call it influenza, a convenient diagnosis in all obscure cases? The confusing points are tardiness of physical signs and absence of sputa. A child does not spit until he is four years old, and does not spit intelligently until he is eight years old. The pain is referred. More often he locates it around the navel. In addition, there is complete absence of the usual physical signs, and we must make use of some unusual ones.

Inspection and palpation may show lack of motion on the affected side; fremitus is difficult and misleading, and I may say the same of percussion. An important clue is the pulse-respiratory ratio. Under normal conditions the pulse is four times as fast as respiration. In ordinary illness this ratio is maintained. In pneumonia the pulse is less than three times as fast as respiration. In other words, with pneumonia pulse rate of 120, respiration should be at least forty per minute, whereas in ordinary illness it would probably be only thirty, or certainly less than forty. To put it differ-

*Read before the Nashville Academy of Medicine and Davidson County Medical Society, February 25, 1936.

ently, if a child is breathing forty times a minute in pneumonia, his pulse rate should be less than 120. If his respiration is sixty, his pulse should be less than 180. The exceptions to this rule are in late meningitis, when the respiratory centers are probably involved; in otitis media, which can ape anything (No one should practice pediatrics without an otoscope); and lastly in appendicitis or acute abdominal conditions. The type of breathing in childhood is abdominal, and anything that makes motion of the abdomen painful will increase the respiratory rate.

With this pulse-respiratory ratio warning, auscultation should be of value, even though rales are absent and typical bronchial breathing slow in appearing, usually not until the third or even the sixth day. Remember that the pneumonic process practically always begins on the surface and extends inward as a wedge. Central pneumonia is extremely rare. Years ago, before the X-ray, Holt made the observation that in ten thousand post mortems he had never seen a central pneumonia. Now bronchial breathing is not an adventitious sound, nothing more than the sound of air passing through a tube. In other words, it is normally present in every lung, and is only heard when the solidification extends deep enough to reach a tube large enough to produce sound enough to be transmitted through the solid lung to the surface of the chest, which is usually the third day or later. But we cannot wait, the child is getting sicker and sicker; the family is clamoring for a diagnosis, and we must make use of unusual signs to get it. Remember that there are two parts to the auscultated sound, quality and quantity. Over the affected area the quality is normal ordinary vesicular breathing. The quantity is diminished and distant. Compensatory overwork of the healthy lung may make you locate pathology on the wrong side, especially if you are not accustomed to puerile breathing. By symmetrical auscultation, comparing the quantity of sounds in symmetrical portions of each lung, we can locate the area with less quantity, but with perfectly normal vesicular breathing, where sooner or later bronchial breathing will

appear. Your patient must be in a symmetrical position. In other words, do not compare the free side with the one he is lying on.

DIFFERENTIAL DIAGNOSIS

Twenty per cent of pneumonias are called appendicitis, though it is rare that appendicitis is called pneumonia. As explained before, the pulse-respiratory ratio may be the same in appendicitis. The points of similarity are the sudden onset, with vomiting, fever, and leucocytosis, and frequently abdominal pain. It is true that fever and leucocytosis are lower in appendicitis, but in borderline cases these symptoms are not to be relied upon, though the rule as usually given is that pneumonia has temperature of 103 or over and more than twenty thousand leucocytes while appendicitis is below these limits, but there are many exceptions. We should here make use of rectal examination in suspected appendicitis, which ought to show right iliac tenderness. Symmetrical auscultation in pneumonia should enable you to locate the part of the lung where the quantity is deficient. Especially if the right lower lobe is involved, pain and rigidity of abdomen are more or less suggestive of appendicitis. In cases of doubt a careful X-ray is sometimes necessary. Pneumonia patients are not good operative risks. Otitis, as mentioned before, may have the same pulse-respiratory ratio, and we should remember also that otitis is a frequent complication of pneumonia, though usually it is rather late in appearance.

The prognosis of lobar pneumonia in children is always good. The crisis comes in seven days, oftener less, and then it is not the heartbreaking affair seen in adults. The temperature drops and the child improves without other symptoms. Five to ten per cent of pneumonia cases have empyema. Now why is the prognosis good? Because he has a good heart. He is unacquainted with Camels and white mule and has not talked depression. Under one year, the prognosis is not quite so good, because babies easily become dehydrated, and it is difficult to maintain their fluid supply.

The bad signs in pneumonia are low temperature; low leucocyte count (and

these are the cases that generally develop empyema), a weak pulmonary second sound which indicates a flabby heart, a pulse rate of 180 plus, respiratory rate of eighty plus, abdominal distension which greatly impairs respiration in a child, midway vomiting or convulsions. The last two are usually due to dehydration with deficient elimination of poisons.

TREATMENT

Fresh air. Cold? Yes, to keep people out, though, I do not think there is any especial advantage otherwise. Maintain the fluid supply. Give at least a quart of liquids a day. In this short disease, lasting only a week, it matters not if he gets no nourishment, but he must have his fluids. Milk is so liable to cause abdominal distension that it must be given very carefully, but, of course, if the child is hungry, there are other things that can be used. Enemas are preferable to purgatives. For rest use opiates. I much prefer hypo morphine, which is much more accurate and does not disturb digestion, though Dover's powders will answer. This is only for rest, not cough. Do not drown the cough. That is the baby's best friend and prevents hypostasis. The position should be changed frequently. For pain or cyanosis a mustard

plaster is very effective. Prevent dehydration by getting in the allotted amount of fluids. Do not bother with the temperature. Be thankful for it, though sometimes the anxious family will make it necessary to give the child a bath. Stimulants are rarely needed. Atropia will dry up excessive secretions. I always associate oxygen with a hearse, probably because I have seen it used too late.

In closing I want to emphasize five points:

First—The important clue of the pulse-respiratory ratio.

Second—Symmetrical auscultation.

Third—Hypo morphia for rest only, not cough.

Fourth—At least one quart of fluid daily.

Fifth—Let temperature rip.

Now, while practically all children get well, Northrup has suggested a formula for producing fatal results. The patient in a canopied bed in a corner of the room with chinked windows and keyhole, a room overheated by a leaky gas stove, a heavy mud plaster on his chest, cough syrup hourly, the whole family and the pup anxiously watching, and if he is still alive after three or four days, give coal-tar preparations and wait, and you will not have to wait long.

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ALLERGY IN GENERAL PRACTICE*

C. S. THOMAS, M.D., Nashville

IF ALLERGY may be defined as meaning any condition of specific hypersensitiveness, exclusive of anaphylaxis in lower animals, it is probably, next to infections, the most common and important single etiological agent in human symptomatology and, as such, should receive careful investigation in every patient. If one considers the various possible combinations obtainable from the numerous substances, giving rise to a specific hypersensitiveness, the pathological reactions produced, as well as the varied methods by which these substances reach the shock tissues which they stimulate, the theoretical justification for this statement is obvious.

The essential pathological changes resulting from allergic irritation are localized edema, spasm of smooth muscle, or a combination of both. The varied symptoms which might occur from this reaction are easily understood when one considers that practically no organ or tissue is exempt, although the favorite sites of localization are the nasal mucosa, the bronchi, the skin, and the gastrointestinal tract.

The substances eliciting reactions are extremely numerous and no complete table is available. In general, they may be divided into groups according to their method of reaching the tissues. The inhalants are such materials as pollens, animal danders, house dust, various seeds, orris root, tobacco, etc. The ingestants include all foods, beverages, medicinal and chemical agents. Those substances effective on contact include the products of the silkworm, cosmetics, perfumes, poison ivy, and innumerable others. Materials active from injection may be subdivided into animal sera, drugs and medicinal agents, and insect bites. There is another group consisting of parasites, physical agents, and bacteria with their products.

Reliable statistics on the occurrence of

allergic conditions are meager. The existing figures vary markedly from Rowe's¹ thirty-five per cent of all persons to Feinberg's² estimate of seven or more million individuals in the United States with some allergic conditions. Hoffmann,³ from World War records, computed that there were more than one-half million cases of bronchial asthma annually in the United States Registration area. Spain and Cooke⁴ estimated that three and one-half per cent of the population of this country are subject to hay fever or asthma at some time in their lives.

If one considers the incidence of the other forms of allergy, it would seem to be a conservative estimate that five per cent of the populace, or one patient in twenty, would be the victim of some allergic condition. To determine if this were true in the out-patient department of Vanderbilt University Hospital, the number of new admissions to the medical division of that clinic from May 1, 1934, to May 1, 1935, were checked to determine the percentage actually treated in the allergy clinic. One must keep in mind here that a number of cases with allergic conditions will be overlooked even in such an organization, that a number of cases who were referred to the allergy clinic did not get through, so were not tabulated in this list, while still others were treated by the physician who first saw the patient rather than referred to this special clinic. Nevertheless, of 1,569 new admissions, sixty-three were treated in the special clinic for allergic diseases, that is, four per cent of the general medical practice in Vanderbilt Hospital out-patient department.

With such an incidence, every practitioner, unless he closes his eyes to facts, will meet with these cases. There is no specialty which may totally escape some manifestation of this condition.

The rhinologist must do something for his patient who is troubled with a rhinitis due to hypersensitivity or hay fever. He cannot, in justice to the patient or himself,

*Read before the Middle Tennessee Medical Association, Lewisburg, November 14, 1935.

treat the condition locally and dismiss them when it can be definitely shown that, with the requisite skill on the part of the physician and good cooperation on the part of the patient, eighty per cent of the hay fever patients can be given satisfactory relief.

Patients like the following are not to be neglected. C. T., a thirty-five-year-old truck driver, had had perennial obstruction of the nose with paroxysms of sneezing and rhinorrhea for five or six years. Two radical sinus operations had been done with but partial relief. When put on a diet of foods to which he gave negative skin reactions and treated with extracts of tobacco and cattle hair to which he gave positive intradermal tests, he received almost immediate relief.

The ophthalmologist will see cases of allergic conjunctivitis, ulcerative keratitis, and iritis which can hope for relief only by the elimination of the offending factors or desensitization of the patient to the specific excitant. A case in point is that of Miss F. W., who had an ulcerative keratitis confined to the upper quadrant. On testing, this patient gave positive intradermal reactions to willow, cocklebur, yellow daisy, orris root, black pepper, carrots, fish, maple and elm pollens. There was an associated dermatitis and gastrointestinal allergy as well as some headache. On a diet and treatment with extracts of orris root, tobacco, dust, maple and elm pollens, a satisfactory healing of the condition was obtained.

The chest specialist frequently sees patients with asthma. Some of them may be quite simple, as L. F., a forty-year-old flour mill worker, who came into the hospital with a story of shortness of breath in the fall and winter for three years. From his story, it was obvious that his asthma occurred only when the doors of the mill were closed so that the concentration of flour which he inhaled was greater. When moved to a dust-free department of the same concern, he had no further trouble.

Others may be quite different, requiring exhaustive study including skin tests, elimination diets, chemical studies of the blood, metabolic rate determinations, and extensive search for foci of infection.

Another type of case which may baffle the man who treats tuberculosis is illustrated by that of Dr. L. W., a twenty-seven-year-old house officer, who developed an active pulmonary tuberculosis. At three years of age, the patient refused milk and excluded it in a great part from his diet. With the diagnosis of tuberculosis, he was put at rest and given larger quantities of milk. In spite of the fact that his lungs showed signs of healing, the patient continued to have a low-grade fever and began to have attacks of alternate diarrhea and constipation. Naturally, the diagnosis of a tuberculous enteritis was thought of, but careful examination could not prove the presence of ulceration of the intestines or colon. Because of the history of a dislike for milk, an intradermal test for this food was done but without a positive reaction. However, after a lunch containing milk, a wheal, three-eighths inch in diameter with an accompanying area of erythema about one and one-half inches in diameter, appeared at the site of the injection. This wheal disappeared in two hours time but reoccurred the next day after lunch. When milk was withdrawn from the diet, the patient's gastrointestinal symptoms rapidly passed.

This example might also be cited as a problem which the gastroenterologist may meet. However, his association with allergic conditions may be quite complex. The symptomatology of food allergy as it influences the gastrointestinal tract is quite varied. The symptoms may be those known to the layman as "biliousness." For instance, there is the case of Mr. H. M., a forty-eight-year-old farmer, who, as long as he could remember, had had attacks of indigestion, characterized by spots in front of the eyes and sour belching, together with distension of the abdomen and flatulence. This man had definite ideas as to the foods responsible for his condition. He incriminated milk, eggs, bacon, beans, peas, lemons, and possibly white bread. When tested, he gave positive skin reactions to the cereals, the bean and pea group, potatoes, and apples. When these were eliminated from the diet, although he continued taking large amounts of milk and eggs, he was free of symptoms.

A typical case of mucous colitis is that of Mrs. A. C., a sixty-nine-year-old widow, who for eleven years had had attacks of alternating diarrhea and constipation, together with urticaria. During an attack, she would have as many as twenty to thirty stools a day, containing much mucus, some pus, and, at times, streaks of blood. These attacks occurred every three or four weeks, the diarrhea being accompanied by much tenesmus and griping. Intradermal tests to all foods were negative. When put on elimination diets, however, this patient had no further attacks, and, so far, the only definite offending foods found have been wheat and pork.

The typical story of gall bladder colic may be given by some of these patients, confusing the gastroenterologist. The case of Mrs. W. B. N. illustrates this. This forty-two-year-old housewife for five years had had attacks characterized by a sharp pain radiating through the abdomen to the shoulder blade, often associated with a residual soreness in the back. There was, also, a story of frequent attacks of "biliousness" with headache and, at times, urticaria. The patient's local physician advised cholecystectomy, and she came to Nashville for that procedure. The Graham test demonstrated a normally functioning gall bladder, however, and, on a diet, no further attacks of pain, biliousness, headache, or urticaria have occurred.

The case of Mr. C. M., a twenty-five-year-old textile worker, illustrates problems involving the hematologist, orthopedist, dermatologist, and surgeon. This young man was admitted to Vanderbilt Hospital because of cramps in the abdomen. Five weeks before admission, there had been a soreness and aching of the right knee, accompanied by a swelling of the tissues of the thigh and wheals over the skin. Other joints were involved in rapid succession together with large bullae and wheals. These symptoms lasted for three or four days, then gave place to gastrointestinal symptoms. The latter consisted of cramping pains in the midepigastrium, occurring daily and being more marked around 9 p.m. and 3 a.m. These pains were usually asso-

ciated with the appearance of an urticarial rash over the trunk and legs. The pain was so severe that the patient was drawn double. During these attacks there were large tarry stools on several occasions. Bronchial asthma had been present at intervals for twelve years. On examination the positive findings were large purpuric spots and urticarial wheals. On an extremely limited diet this patient was easily relieved of his symptoms. A tomato was given when the patient was symptom free and immediately all of the symptoms reoccurred. He was again put on the limited diet with subsidence of symptoms. Unfortunately the patient refused to cooperate and left the hospital.

The dermatologist will be confronted with urticaria and angioneurotic edema, examples of which are included in the cases already cited. His biggest problem from an allergic standpoint will be the eczemas. An illustrative case is that of Mr. T. L. P., a farmer of sixty-six years who had eczema of the face, head, neck, arms and ankles, which began in April seven years before he was seen. His skin would be clear in the winter but break out from February to May, the eruption lasting until frost. There were also gastrointestinal symptoms. On treatment with grass and fall pollens together with the removal of several foods from his diet, he improved rapidly.

The neurologist will be consulted for migraine, of which about sixty-five per cent are believed to be allergic in origin. A case of this type is that of Mrs. J. W., a thirty-four-year-old housewife, who nine years ago, on going to Tucson, Arizona, began to have sick headaches. At first the headaches had no relationship to food or the menses. On returning home the headaches ceased and did not return until the patient again went to Tucson. In the second year at Tucson the patient developed a typical hay fever. This time on returning home the rhinorrhea ceased but headaches continued. There was now a definite association with the menses. Attacks of typical migraine with visual disturbances, vomiting, etc., occurred two or three times a month, each attack being severe enough to confine the patient to bed for three or four days. There

were also gastrointestinal symptoms diagnosed as "colitis." On removing the foods to which the patient gave positive intradermal tests as well as several inhalants, no further sick headaches have been experienced for one year. Whenever the patient goes out into a crowd where tobacco smoke is thick she still experiences some discomfort.

The neurologist or the neurosurgeon may also be faced with a problem such as that presented by Mr. A. B. McC. This thirty-seven-year-old railroad telegraph operator was first seen on October 20, 1933, complaining of roaring in his ears and dizziness. His story was that four and one-half months previous he had begun to have attacks of tinnitus, vertigo, nausea, and vomiting. The attacks would begin as a roaring in the right ear. This roaring would continue for about six hours, at the end of which time he would be extremely dizzy, and surrounding objects would begin to whirl and vibrate. There was some diplopia associated with the vertigo. Two hours after the onset of vertigo, the patient became nauseated and began to vomit. The vomiting had a definite tendency to relieve the vertigo and tinnitus, but relief was not complete. At first, there was an interval of thirty-six hours or more between attacks, but this became shorter and, together with the more frequent attacks, there was a continuous dizziness so that the patient frequently had to save himself from falling by grasping a near-by object. Tests of the ears demonstrated a bilateral nerve deafness more marked on the left. The caloric test showed an unsustained lateral nystagmus. The spinal fluid was negative. The neurosurgeon, who saw this patient, considered section of the nerve on the left.

Knowing that a few cases of Meniere's syndrome of allergic origin had been reported, we decided to give the patient the advantage of a trial before subjecting him to operation. Positive skin reactions were obtained to tobacco, pyrethrum, house dust, and feathers, as well as a few minor foods. Treatment with extracts of feathers, dust, and tobacco rapidly yielded gratifying results, and the patient has now gone two

years without a recurrence of his vertigo and tinnitus.

The orthopedist may see a few allergic joints, such as that of L. J., a seventeen-year-old farm boy, who had had asthma since six years of age. One day, after being tested in the course of an investigation as to the cause of his asthma, he returned, saying that he had forgotten to tell me that one of his knee joints had swollen the day before. When the joint was examined, I found an enormous effusion into a non-tender joint, without signs of inflammation. Extensive efforts to find an etiological agent were of no avail, but the joint returned to normal without treatment in less than a week.

The urologist, at times, encounters bladder irritability due to food allergy. Even the obstetrician may have to know what may happen to the asthmatic woman during pregnancy. He must also know the facts about heredity in allergy in order to give the correct information to allergic parents.

Drug allergy, which is more common than it is ordinarily considered to be, may, at times, be quite serious and should interest every doctor. The case of D. C. will illustrate one of the problems from this source. This twenty-two-year-old grocery salesman was examined and a diagnosis of scarlet fever made. There were certain points which did not exactly fit this diagnosis, because of which a consultation was held. The consultant agreed with the diagnosis of scarlet fever. The rash subsided in four days, and the patient began to desquamate on the seventh day of the disease. About the time of onset of desquamation, the patient, of his own accord, took a dose of quinine. The next day the fever and rash presented the same picture as that seen on the first visit. A history of taking quinine on the morning of the onset of the illness clinched the diagnosis of a drug rash rather than scarlet fever.

The problems of allergy, therefore, are not confined to the specialist in allergy, and one cannot hope to have enough specialists available to cope with the personal problems of, to say the least, several millions of people. The general practitioner and the

pediatrician, men who see all and must know a little about everything, certainly cannot afford to neglect the allergic problems in their patients.

There seems to be ample room for both the specialist and general practitioner in this field. Just as the orthopedist has his function and place, yet the majority of fractures will and should continue to be treated by the family physician, the same is true of allergy. The general practitioner must acquaint himself with the principle of allergy so that he will be competent to handle, at least, the simpler cases of this condition. Even then there will remain problems requiring the skill and experience of the specialist.

At the present time the proportion of allergy patients which the specialist must manage is considerably greater than in some other fields. The average practitioner unfortunately will have to make a strenuous effort to obtain the information and acquire the necessary skill to assume the responsibility of the care of some of the allergic individuals.

This is no more than was required to prepare him to deal with fractures, the diagnosis of heart lesions, and the management of childbirth. There is no reason why a similar effort will not be required to obtain the requisite skill in handling hay fever, asthma, or eczema.

It is true that little or no training in the management of allergic conditions was obtained in medical school or as an intern where the average practitioner received his essential training in most of the conditions which he is called upon to manage. Even

now the majority of schools give no systematic training in allergy to their undergraduate students, although some do have elaborate clinics in this field. Information and training in this subject may be obtained if the physician-student starts out by reading thoroughly one or two of the simpler textbooks^{5 6 7} now available on the subject. Later the larger texts and selected periodic literature should be studied. Training and study under the guidance of someone experienced in the management of allergic diseases is usually necessary for a proper preparation. Some of the visual experience necessary may be obtained by visits to the clinics connected with many medical schools. More fundamental and sufficient training may be obtained in one of the formal courses of postgraduate instruction now available from men specializing in this field.

With a reasonable foundation of basic knowledge, increasing skill and experience in this, as in any field, will be the result of careful observation in one's own practice.

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THE OPHTHALMOLOGICAL SYMPTOMS OF ENDOCRINE DYSFUNCTION*

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IN THIS PAPER thyroid, pituitary, gonad, and adrenal dysfunctions will be touched upon. Time does not permit consideration of other glands and the symptoms attending their disturbed function.

Doubtless, deeper study in time may reveal many new and useful facts. Do not let us fail however to use our calm judgment in evaluating them.

Stewart's observation is very pertinent. He says, "The contrast is great, when we leave the desert where physiologists and experimental pathologists have wandered, striking many rocks but finding few springs, and pass into the exuberant land of clinical endocrinology flowing with the blandest milk and honey almost suspiciously sweet."

Fuchs says, "The beneficial effect of drugs derived from glands is conclusive only if it has been obtained in numerous cases and with a certain amount of regularity, as for instance the thyroid treatment of cretanism."

Even if success in a given case could be attributed to the gland drug, it would by no means be a proof that the disease is due to a trouble of this gland. He says Haskins is right in asking whether, because cascarn is efficacious in relieving constipation, we ought to conclude that this is because the patient is suffering from hypocascarnism.

According to Goldzieber, ocular manifestations which we actually ascribe to endocrine disturbances include:

1. Changes in the eye grounds and the optic nerve.
2. Changes in the function of the ocular muscles and the eyelids.
3. Lesions of the cornea and conjunctiva.
4. Cataract formation.

5. Vitreous lesions.

6. Abnormalities of the visual fields.

7. Disturbances of ocular tension.

8. Anomalous pigmentation.

Thyroid Dysfunction.—In this discussion emphasis is placed upon the minor and early ocular manifestations of thyroid dysfunction rather than the later and more marked symptoms such as exophthalmos. The oculist sees many cases with obscure symptoms which are difficult to evaluate. There may be obstinate asthenopia or persistent lachrymation without adequate explanation. Some of the cases we set down as neuroses, and they go from doctor to doctor to have frequent changes of glasses without relief. Many cases of incipient thyroid dysfunction go first to the ophthalmologist, and careful study should be given to this subject in order that we may recognize those cases that are of thyroid origin.

Hyperthyroidism.—It is of the utmost importance that cases of hyperthyroidism be recognized early since it is by this means they may be referred to the surgeon for proper surgical measures and years of ill-health avoided.

One should pay particular attention to the symptom of lachrymation. Patients come complaining of this symptom for which no adequate explanation can be found, and the tearing persists despite symptomatic treatment. When such cases are followed sufficiently long enough some of them will develop hyperthyroidism. Hence, in stubborn cases of this type incipient hyperthyroidism should be suspected, and careful study made of the history, the clinical aspects, and the basal metabolic rate.

Another of the earlier ocular symptoms which brings the patient to the ophthalmologist is obstinate and persistent asthenopia. This condition may vary in degree from moderate discomfort to inability to use the eyes at all for near work. The cause of the asthenopia may not be at once ap-

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parent; careful study of the refraction, of the extraocular muscle balance, and of the accommodation may be negative.

It may be that weakness of convergence exists due to disturbed thyroid function and that this is the cause of the persistent asthenopia. It cannot be considered as a true sign of thyroid dysfunction, since convergence insufficiency may be due to other causes such as encephalitis, basilar meningitis or other diseases of the central nervous system. In cases of persistent convergence insufficiency a careful and searching study of the patient should enable the ophthalmologist to determine whether he is suffering from thyroid dysfunction, disease of the central nervous system, or other bodily disability accounting for the convergence weakness. Prompt steps should then be taken to secure relief. If the cause is found to be hyperthyroidism, thyroidectomy may be indicated; if hypothyroidism, thyroid extract should be given. If to neither of these causes, whatever the indications, they should be recognized and met with decisive action. In cases of thyroid dysfunction with convergence insufficiency or weakness, reading should be restricted until the thyroid condition is corrected. In conjunction with the convergence insufficiency there may be disturbances of accommodation. Variance in this function may extend to several dioptres. Reudeman says he does not prescribe glasses until six months after thyroidectomy. The disturbance of accommodation may be severe and permanent and may make it necessary for the patient to change his occupation. Careful study of the underlying causes may lead us to the diagnosis of thyroid dysfunction.

Paralyses of the extraocular muscles are not common in hyperthyroidism, but they occur with sufficient frequency to cause one to be on guard. According to Reudeman, such paralyses are due to infiltration of the orbit by secondary fibroses and lymphocytic invasion. Some are undoubtedly of central origin. Such paralyses may be of relatively early origin; hence, these cases may first come to the ophthalmologist. The paralysis may affect one or several muscles and may be transitory, appearing and disappearing. This is particularly true in my experience

of paresis of the superior rectus. After the thyroid disease has been corrected and the patient's condition has become stabilized, which requires six months or a year, surgical measures directed to the correction of the extraocular paralysis or paresis may be safely resorted to.

The important thought in this connection is to recognize thyroid disease as the origin of the eye muscle disturbance so that the case can be properly treated.

Widening of the palpebral fissure (Dalrymple's sign) may be mistaken for exophthalmos. It usually precedes it. It is corrected by thyroidectomy. To *distinguish* this symptom from exophthalmos measurement of the palpebral fissure should be made and the degree of exophthalmos determined with the Hertle exophthalmometer.

Von Graefe's sign (lid lag) is probably due to spasm of the levator palpebrae superioris due to overstimulation of the sympathetic nervous system. It may be unilateral. Spasm of the levator palpebrae may be responsible for the photophobia and lachrymation. It is corrected by thyroidectomy unless it has been present too long.

Exophthalmos is the most important ocular symptom in the minds of many. It is less the cause of the frightful appearance of the patient than the widening of the palpebral fissure. Reudeman concluded, after measuring 1,500 normal individuals with the exophthalmometer, that an anterior-posterior position between 14-20 mm. may be considered normal.

Exophthalmos is amenable to thyroidectomy if taken early. This fact should be remembered. It also occurs in postoperative hypothyroidism. It is not so much an indication of the severity of the hyperthyroidism as is the widening of the palpebral fissure. It is rather an indication of the length of time the disease has been present. Progressive exophthalmos is an indication for early thyroid surgery. If it is delayed too long, recession after operation is not to be expected. The possibility of recurrence of the exophthalmos following thyroidectomy should always be considered.

Corneal disturbances are mostly the result of exposure and drying of this mem-

brane. This is caused by the retraction of the lids and the exophthalmos, or both. Ulcers may occur and are dangerous.

Reudeman mentions, and the writer has seen, transitory increase of tension in those suffering from hyperthyroidism. Such eyes do not follow the usual course of glaucoma, and there are no field or fundus changes characteristic of glaucoma.

In suspected cases of hyperthyroidism, borderline cases must be *distinguished* from neurasthenia, neurocirculatory asthenia, and latent tuberculosis.

The elevation and readiness of change of the basal metabolic rate have a considerable diagnostic value. It may not be increased during a period of remission of the hyperthyroidism brought about by the administration of iodine or by radiation therapy.

Pulsation of the retinal arteries has been observed by the writer in such cases. There is flushing of the skin of the face and chest and visible pulsation in the arteries of the neck.

There is inability to concentrate, faulty memory, and, according to Crile, thalamic symptoms may be noted, such as inclination to laugh or weep.

Children with hyperthyroidism are usually mentally and physically about two years ahead of their age.

Many of the neuroses and psychoses, particularly the neurosis of the menopause, encephalitis, chorea, Parkinson's disease, alcoholism, and arteriosclerosis, may be mistaken for hyperthyroidism. In neurocirculatory asthenia, ocular pressure may cause a distinct slowing of the pulse rate. This reflex is not present in hyperthyroidism. In the former condition the pupils are often dilated and show hippus, and epigastric pressure may produce pupillary dilatation.

The basal metabolic rate is high in severe arterial hypertension and organic heart disease. It is probable, Crile says, that these readings are never basal. The retinal vessels will show degenerative changes, and the other eye signs of hyperthyroidism will be absent or slight.

The protusion of the eyeball in exophthalmic goitre has been attributed to (1) vascular disturbance; (2) an abnormal

tonus of Landströms musculus palpebralis innervated by the sympathetic; (3) a desposition of retrobulbar fatty tissue.

In the less severe forms of hyperthyroidism there is only disturbed functional activity and possibly increased susceptibility to infections. It is probable that ocular muscle imbalance, so difficult of correction, may be related to the reaction of the ciliary muscle. It is evident that hyperthyroidism, with the exception of exophthalmic goitre, has a less effect upon ocular development and function than have the earlier hypothyroidities.

Intraocular tension is reduced after resection of ophthalmic goitre. Paradoxical behavior of ocular pressure is often observed in thyroid disease.

Degeneration or inflammatory changes in the cornea depend mostly on exposure of this membrane due to exophthalmos or muscular spasm.

Englebach states that there is retinal infiltration in myxedema with pearly white areas resembling the white patches seen in hypertensive retinitis and are frequently mistaken for such.

Hypothyroidism.—Vague symptoms related to the neurasthenic or exhaustion syndrome, fatigue, depressions, mental sluggishness, constipation are suggestive of hypothyroidism. The basal metabolism may be misleading. The variance toward a minus reading is much less than toward a plus reading in hyperthyroidism.

According to Hartsock, the only certain test is the therapeutic one. These patients suffer from cold, are always physically tired, and are constipated. They have subnormal temperature with slow pulse and low blood pressure.

Hypothyroidism may develop in any patient who has had thyroidectomy or irradiation. Such persons may be comparatively in good health; but in the writer's experience often have obstinate asthenopia with persistent deficiency of the convergence and subnormal accommodation.

In hypothyroidism, the nervous, ocular, cardiovascular, and gastrointestinal systems are principally affected. The nervous and ocular symptoms are extremely difficult to combat, and if their thyroid origin is not

recognized we may fail completely to help them. Persistent headaches, possibly due to vascular hypotension and resultant impairment of the cerebral circulation due to the hypothyroidism, not infrequently bring the patient to the ophthalmologist. Probably a majority of the ocular symptoms in hypothyroidism are due to the state of the ocular muscles.

Hartsock stresses the importance of recognizing incipient hypothyroidism. He says specific diagnostic methods are lacking and it may occur at all ages. In children it may cause behavior problems, at puberty diminished endurance, and anemia and exhaustion in young adults. Mild psychic disorders, fears, poor memory, and difficulty in concentration may occur. It should be suspected when such symptoms as we have been considering cannot be explained as due to some other cause.

Hypogonadism.—According to Marinus, hypogonadism is a deficiency of the internal secretion of the gonad. We are entirely aware of the double function and secretion of the gonads. The internal secretion of the ovary is active long before menstruation begins and long after it ceases. This internal secretion of the ovary apparently exerts its activity upon the vegetative nervous system as a whole, acting as a stabilizer to its functions. In this it might be considered as an antagonist of adrenalin. Deficiency of the ovarian hormone results in instability as shown by the hot flashes, red blotches and areas in the skin, and the red or white lines following a slight scratching of the skin. The deficiency results in a state of hyperirritability of the vegetative nervous system, which makes possible the explanation of many disturbances observed in the various fields of medicine. The excessive reaction to emotional stimuli may work in either direction, euphoric or melancholic. The coincidence of an unstable emotional personality, together with the physical symptoms produced by the overactive vegetative nervous system, is frequently considered to be a psychoneurosis and so treated, the physical basis being omitted from consideration.

There are two groups of hypogonad cases:

(1) Developmental: failure of the gonad development resulting in the eunuchoid type of individual. It may be inherited, but is more frequently due to deficiency of the sex hormone of the pituitary, to thyroid deficiency, or inflammation of the ovaries during the developmental period. Such cases are emotionally unstable, have lack of self-confidence, inferiority attitudes, and an inability to face the responsibilities of life. They frequently suffer from nervous dyspepsia, or a spastic colon with a secondary colitis. There may be tachycardia on emotion or exertion. The respiratory mechanism may be involved, resulting in uneven or sighing respiration, alternating with regular breathing. There is present abnormal perspiration as evidenced by excessive sweating of the palms and axillae.

(2) Decreased function of the gonads after puberty. The symptoms in the female may not develop for five to seven years after operation where a portion of the ovary remains. The symptoms bear no relation to the presence or absence of menstruation. The rhythm of menstruation is controlled by the pituitary gland. The cycle persists long after castration and the normal menopause. The changes resulting in production of the next menstrual period begin about two weeks before the onset of the flow. In hypogonadism the symptoms begin at this point and reach their maximum at the time menstruation is due. Delay or failure of the menstruation causes a marked increase of the symptoms. Symptoms occurring regularly during this interval before the period are partially at least due to ovarian deficiency. The rhythmic increase of symptoms at the time the period is due is observed many years after the natural menopause. Severe symptoms may mask this rhythmicity. The absence of the rhythm usually indicates the condition is not one of hypogonadism. The menstrual history is of little value in determining a diagnosis of hypogonadism. "There is a high incidence of astigmatism in hypogonadism, which is frequently variable so that re-examinations and new lenses are necessary at short intervals."

Symptoms of eyestrains are observed from very small errors of refraction which

would ordinarily be well tolerated. There is also a high frequency of ocular muscle imbalances. They are frequently corrected by glandular treatment. The astigmatism may lessen, but does not disappear. It may be an etiologic factor in myopia.

Headache is an exceedingly common symptom in hypogonadism. Such a headache in the absence of or after correction of a refractive error is suggestive of hypogonadism in the absence of other causes.

Hypogonadism may also simulate hay fever and thus affect the eyes. Periodic attacks of "conjunctivitis" are frequently seen in young persons, females in particular, and may be dependent upon a mild degree of this condition. A certain proportion of them may be allergic. Those showing slight skin reactions to many antigens with no marked reaction to any one antigen suggest the possibility of hypogonadism. The same thing applies to asthma. During this abnormal state, infection of the nasal accessory sinuses is invited. Surgery may appear to be called upon, but the rhythmic disturbances continue to occur after surgical interference. This may account for many poor surgical results.

Treatment of hypogonadism in the male is not particularly successful. The recently prepared concentrated sex hormone specifically relieves the symptoms of hypogonadism, but is so rapidly excreted that the results are not practical. Marinus remarks, "I have used the female preparation in the male with poor results in the majority of cases. The possibility of benefit justifies the therapeutic test."

"In young girls with the primary type of hypogonadism therapy should be directed toward completion of ovarian development rather than the relief of symptoms."

It is frequently possible by the use of the sex hormone obtainable from the urine of pregnant women to stimulate ovarian development to the point of permanent cure. The efficiency of treatment should be judged not by the relief of symptoms, but by the increased development of the uterus and pelvis and increase in the secondary sex characteristics. If and when ovarian development is obtained the specific hypogonad symptoms will decrease.

Hypogonad cases after the age of twenty will not require the above treatment, but will require treatment with substantial ovarian therapy. Whole ovarian extract is given hypodermically daily or every second day until the symptoms are controlled. This will be evidenced by a sense of well-being and of complete adequacy. The prognosis of hypogonadism as to the relief of symptoms in group 1 is excellent in the absence of complications. In the primary type of hypogonadism fifty per cent are cured. In the secondary type the prognosis is bad when the ovarian tissue has been removed or destroyed.

In functional ovarian deficiency pregnancy has a definite therapeutic value. This is apparently due to the stimulation of the ovaries by the increased pituitary activity. This holds a hope that with more potent pituitary preparations the ovarian function may be so stimulated that the prolonged ovarian treatment now required may not be necessary.

I do not know of any class of patients suffering from headache and asthenopia who present a more difficult problem to the ophthalmologist than women who have been castrated. In many cases they seem unable to use their eyes with any degree of comfort for any purpose, particularly near work. They are excessively emotional. In such cases it is important that the underlying cause of the symptoms be recognized and that an attempt be made to give them relief by the means above discussed. The ophthalmologists frequently see these patients because their ocular symptoms are those which give them the most discomfort.

The feeling of excessive dryness of the lids at night frequently complained of by elderly women is probably due to hypogonadism.

Inflammation of the conjunctiva of a follicular character, causing considerable discomfort by itching and dryness, is not infrequently seen in elderly women; less often in elderly men. This is important. It does not yield to the usual treatment which, in fact, may make it worse, resulting in extreme annoyance.

The inflammation of the uveal tract seen

in disturbances of menstruation is suggestive.

"The menopause invariably coincides with a tendency to increased tension," says Marinus.

Some have thought changes in the gonads caused by advancing years may account for senile cataract. There is no proof whatever of such contention.

Pituitary.—The headaches and asthenopia of aneoplastic pituitarism of various types have no characteristics relating them to the hypophysis. They simulate migraine of nonpituitary origin more than any other form of headache. Migraine is considered an hereditary headache, having three cardinal symptoms.

(1) Periodic headache, most frequently hemicranial, preceded by some peculiarly localized or generalized aura.

(2) Ocular symptoms, ranging from mild scotoma to complete temporary blindness, diplopia, and hemianopsia.

(3) Gastric symptoms.

In this typical triad there are frequently associated symptoms referable to other organs.

Some cases have a definite premonitory aura consisting of various localized sense perceptions as well as those of general well-being. There may be abnormalities of taste, smell or appetite. During the aura preventative treatment should be given before the severe gastric symptoms appear. Some of the attacks may be aborted in this way.

The localization of the pain is not typical, but in the majority of cases it is described as a diffuse pressure pain through the entire head and upper face accompanied by scalp tenderness and soreness of the eyeballs and glabellar region, often described as a deep-seated pain back of the eyes radiating to the temporal region. It is often associated with menstruation. Some cases are relieved by conception, to return afterward. The physiologic hyperactivity of the hypophysis associated with gravidity is assumed to restore the endocrine imbalance.

The name "blind or black headache" has its origin in the ocular symptoms. The hemianopsia being temporary and being associated with headache, nausea and vomit-

ing differentiate them from those related to permanent pressure upon the chiasm due to pituitary tumor or other causes. Associated symptoms may be constipation to which the headache may be attributed or the toxemia due to it.

Its frequent occurrence in association with menstruation or menstrual disturbances leads to the assumption that it must be due to ovarian disturbance. This probably accounts for the many gynecologic operations done for the relief of the headaches. The pains in the bones of the face and jaw and the pharyngeal symptomatology have caused many nasal and dental operations to be done.

Astigmatism and errors of refraction have been corrected in the great majority of the cases without producing any effect upon the severity of the symptoms.

There is not infrequently polyuria, polydipsia, and polyphagia. They are not associated with glycosuria or hyperglycemia. The polyuria differs in no way from that of diabetes insipidus. Pituitary glycosuria and hyperglycemia are to be distinguished by their disassociation from each other and from the food intake and by their being in conjunction with a pituitary disorder.

In those headaches due to anterior lobe deficiency treatment with the growth and sex hormones, antuitrin G. and S. (Parke, Davis & Co.) or growth hormone (Squibb) and folentin (Squibb), is indicated.

In those having hyperactivities of this lobe X-ray treatment is indicated.

In the adiposogenital type treatment with acid extracts of the anterior lobe and pituitrin has given the most relief.

The ocular signs in pituitary tumor result from pressure upon the optic nerves and chiasm, causing perimetric defects and optic disc changes. Pressure upon the optic nerve and chiasm or on the chiasm alone produces varying degrees of scotomata and obliteration of the visual fields. If the pressure is upon the mesial fibres of the chiasm the classic bitemporal hemianopsia results. The direction of the growth of the tumor is along the line of least resistance which is an attempt at decompression. Pressure upon a portion of the optic nerve is released by giving way of other parts of the sella

wall; an entirely different set of nerves may then be involved; as a result the perimetric picture is constantly changing. This is characteristic of the condition.

In the case of a rapidly-growing tumor which suddenly decompresses itself through a destruction of a considerable part of the bony wall of the sella there may be a temporary restoration of vision because of the relief of pressure upon the optic nerve. The variability of these perimetric projections is one of the signs of progression, not of regression. Hence, changes in the visual fields after several examinations are indicative of progressive tumor growth. Diplopia, strabismus, paresis or palsy of the extraocular muscles result from pressure on the third, fourth, and sixth nerves. Choked disc may occur and is usually the result of increased intracranial pressure and not a focal symptom. It is not likely to occur before this stage.

Primary optic atrophy may occur. Owing to the late and infrequent occurrence in intrasellar tumor, it should not be regarded as a major sign in this type of tumor.

Involvement of the uncinate gyrus may occur and may be associated with attacks of epilepsy associated with the "uncinate fit"; *i. e.*, minor abnormality of the functions of the sense of smell and taste associated with a dreamy state in which phantasmagoric pictures may present themselves, giants, dwarfs, colorful processions, etc.

About fifty per cent of pituitary tumors show disturbed vision; simple atrophy being most common, optic neuritis and choked disc less common.

The physiological enlargement of the pituitary in pregnant women causes temporary changes in the visual fields.

Signs of generalized increased intracranial pressure may present headaches, choked disc, photophobia, projectile vomiting, and slow pulse. Operation should be instituted long before this occurs. Cushing says that delayed operation upon cerebral tumor causes a high mortality. Early operation is indicated before the classical signs of increased intracranial pressure occur. To delay operation until this stage is analo-

gous to delaying operation in appendicitis until a general peritonitis has developed.

The headache may be a neighborhood sign and due to pressure on the capsule of the gland within the sella. This conclusion is reached from the intensity of the headache as compared with the size of the tumor. It is deep seated and frequently located in the sellar region. They are not constant and probably occupy a similar relation to the growth of the tumor as the perimetric changes. It is frequently hemi-cranial, sometimes vertical. It is variable in intensity from a feeling of tightness or fullness with mental and psychic confusion to a bursting and explosive sensation. The photophobia and headache often precede the perimetric changes. The hormonal signs are acromegaly, hypertrichosis of the terminal extremities, hairy verrucae being scattered over the body with chloasma and vitiligo about the forehead, face, neck, and chest. Such symptoms are more often seen in the female.

Hypersexuality may occur early in the tumor growth due to stimulation of the gonads. Later there is diminished libido, impotency, and sterility. Subnormal temperature, lowered blood pressure, and slow pulse may accompany this hypofunction.

The association of keratocoma with adiposogenital dystrophy suggests pituitary insufficiency as a cause.

Lawrence-Moon-Biedl's syndrome, obesity, genital dystrophy, mental deficiency, polydactylism, and retinitis pigmentosa suggest pituitary deficiency. Striking improvement on pituitary therapy of proper dosage and potency has occurred.

Wibaut says retinitis pigmentosa occurs more frequently in men than in women and is more serious in men. Because of this predisposition he regards it rather as a secondary sex characteristic than as a characteristic bound in with the sex chromosome. This fact gave rise to the theory that the cause of the diminished frequency and severity in the female resides in a hormone which exists in the female organisms and influences favorably the course of the disease. On the basis of this theory menformon was employed with which good results were obtained. Spontaneous improvement

is not known to occur in this disease. The therapeutic effect of menformon was determined by its effect in the visual fields and consciousness to light. Of the five patients treated, one was greatly benefited, two noticeably improved, one slightly improved, and one of long standing remained unchanged.

Recent researches seem to link hemeralopia (night blindness) to the functions of the posterior lobe because of the peculiar interrelation of the retinal pigment and the melanophore hormone. This hormone is present in large concentration in the ocular vitreous and seems to intervene in the adaptation of the eye to darkness.

Neurocirculatory Asthenia.—This condition, according to McCullagh, is a syndrome in which fatigue, shortness of breath, and neurovascular disturbances are the chief symptoms. The cause lies in the disturbed function of the sympathetic nervous system, dependent upon irregular action of the chromaffin system, particularly the adrenals. Patients with this disease do not show fear and anxiety as outstanding symptoms as do those with a psychoneurosis.

It is a disorder of young adults. Two types are seen:

1. The alert, excitable, artistic type—this is the most frequent.
2. Subnormal mental types having definite emotional instability.

The symptoms most frequently complained of are fatigue and nervousness. There is lack of energy and endurance and a tired feeling in the morning. There is no definite muscular weakness, so far as a single act is concerned, but there is early fatigability and increasing exhaustion. "Nervousness" is a major complaint; this comprises those vague and indefinite symptoms so commonly spoken of by patients, meaning a subjective sense of uneasiness or excitement. McCullagh describes "nervousness" as being made up of a physical and a psychic part.

The physical portion results from the vague sensations coming from the viscera supplied by the irritable sympathetic. The sensations of this type are closely allied to the "feeling tone" and the central nervous

system is incapable of translating such sensations into anything more definite.

The psychic portion is due probably to those vague visceral disturbances producing an anxiety neurosis as a result of the constant anticipation of a return of uncomfortable sensations on slight stimulation. Mental irritability and poor concentration are frequently present together with breathlessness, mild dyspnea or a sensation of constriction about the chest as if insufficient air is entering the lungs. Frequent sighing is a common symptom. Palpitation and heart consciousness is frequently associated with tachycardia. There is a tendency to vertigo, sense of faintness or fainting. This is not an outstanding symptom. Cold sweating hands and feet is a constant symptom. Mild precordial pain may be present. Headache, mild and diffuse, associated with vague sensations of pressure of fullness or sudden sensations of heat or cold, may be present.

Nervous indigestion, associated with hypertonicity and hypermotility of the gastrointestinal tract as shown by the X-ray and constipation of the spastic type, is present in a large number of cases; the appetite is subnormal.

Oculocardiac reflex or slowing up of the heart on ocular pressure is noted. Strong convergence of the eyes produces acceleration of the pulse (Ruggeris' reflex). Widely dilated pupils are a constant symptom. This may be so marked that Lowe's pupillary reflex cannot be noted (dilatation of the pupils following instillation of 1:1000 adrenalin solution).

Hippus is a frequent symptom. The viscerocular reflex is frequently present, *i. e.*, dilatation of the pupils on firm epigastric pressure. Ciliospinal reflex is also frequent as is Somogyi's reflex, *i. e.*, dilatation of the pupils on deep inspiration and contraction on expiration.

There is a marked flushing of the skin which is fairly constant about the face and neck. There is a tendency to general hyperhidrosis, particularly in the axillae, hands, and feet. Pilomotor response occurs on slight stimulation and is maintained for from five to ten seconds.

The conditions which most commonly simulate neurocirculatory asthenia are (1) psychoneurosis; (2) hyperthyroidism; (3) chronic infections. Less frequently encephalitis, encephalomyelitis, hypertension, valvular heart disease, and anaemia.

These signs of hyperstimulation of the sympathetic system may be due to an increase in stimulating factors or to a state of hyperexcitability of the system.

The most constant symptoms are flush-

ing, a tendency to acrocyanosis, hyperhidrosis, and hypothermia of the extremities; fine digital tremor is quite constant.

Stimulation of the sympathetic provokes mydriasis and increased intraocular tension, a typical sympathicotonic syndrome. This will not cause an attack of glaucoma. If, however, there are certain anatomic factors in the eye, glaucoma will result; either the simple or acute congestive type.

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THE RELATION OF THORACIC SURGERY TO OTOLARYNGOLOGY*

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SINCE THERE is only an arbitrary division between the upper and lower portions of the respiratory tract, the problem of diagnosis and treatment of affections of the respiratory system are often of mutual interest to the otolaryngologist and the thoracic surgeon.

Experience has shown, for example, that tuberculosis of the larynx is usually an infection secondary to an active pulmonary lesion, and that its progress depends to a large extent upon the condition of the affected lungs. Bronchiectasis is so often associated with a chronic infection of the accessory nasal sinuses that it is the belief of some that there is a cause and effect relationship between them. "Unresolved pneumonia" with resulting lung abscess is a postoperative complication of all surgery, but particularly so of surgery of the upper air passages. Diverticulum of the esophagus, or hypopharynx, not infrequently is first made manifest by the pulmonary complications due to aspiration of regurgitated food. Infections about the mouth or throat occasionally lead to abscesses of the mediastinum, following paths prescribed by the fascial planes of the neck. Malignant or benign tumors of the lungs, mediastinum, or thoracic esophagus are of interest to the otolaryngologist from the standpoint of diagnosis, and to the thoracic surgeon because they present therapeutic problems.

The thoracic surgeon is deeply indebted to the otolaryngologist for the perfection of the bronchoscope and esophagoscope, as they are as essential to him as the ophthalmoscope, cystoscope, otoscope, and proctoscope to their respective users. In return the thoracic surgeons have contributed much to our knowledge concerning the pathological physiology of the lower respiratory tract and the mechanism of postoperative com-

plications, and now offer relief to certain patients previously thought incurable.

TUBERCULOSIS

Collapse therapy, as an adjunct to the traditional treatment of bed rest in tuberculosis, has greatly changed the outlook of the tuberculous patient in the localities in which it is extensively used. Its rationale is based upon the established principle of rest and nature's attempt at fixation and consequent reduction in the volume of the diseased lung by scar tissue formation. The principal measures employed are phrenic nerve interruption, pneumothorax, and thoracoplasty, with several accessory and special operations to be used in selected cases. There are several sanatoria in this country in which some form of collapse therapy is applied to seventy-five to eighty-five per cent of all resident patients. Chadwick, an internist, reports that this regime in the institutions under his care in the Detroit area has resulted in the arrest of approximately six times as many patients as were arrested with the old bed rest treatment alone, with approximately one-third the number of deaths. In addition to this, an uncalculated economic saving is brought about by shortening the hospitalization time required for each patient, and by returning patients to productive activity earlier. Successful collapse therapy causes tubercle bacilli to disappear from the sputum and therefore removes the danger of the patient being a carrier of the disease to his family and community.

It has been the experience of many that the effects of local treatment of tuberculous laryngitis, aside from the rest of the voice, are so variable that their specific value may be questioned. It is well recognized, however, that these lesions almost uniformly improve when the patient is placed upon a strict whispering regime and the pulmonary lesions are definitely under control. The diagnosis and local treatment of tuberculous laryngitis require the special knowledge and

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skill of the otolaryngologist, even in those patients undergoing surgical treatment; and, conversely, the local treatment may advantageously be supplemented by collapse therapy applied to the offending lungs.

BRONCHIECTASIS

Bronchiectasis exists in many patients who have no symptoms until the bronchial dilatations become infected from some other disease of the upper respiratory passages, after which cough, expectoration, occasional hemoptyses, and halitosis may develop. In others, it is acquired following an infection of the bronchi, tuberculosis, pneumonitis, or an obstruction of a bronchus due to a foreign body or neoplasm. Its frequent association with chronic disease of the nasal accessory sinuses leads one to believe that chronic sinusitis has at least an aggravating influence upon the infection which is present.

A patient with bronchiectasis deserves at least a diagnostic bronchoscopy to determine what obstructive factor, if any, may be present, and an intrabronchial instillation of iodized oil with X-ray visualization to establish the diagnosis. The treatment consists of bed rest in acutely ill cases, treatment of any upper respiratory infection present, postural drainage every two hours, repeated bronchoscopic aspirations, repeated iodized oil instillations, temporary phrenic nerve interruption for patients with hemoptysis, arsphenamine when the Vincent's spirochetes and fusiform bacilli are present, and lobectomy for patients with the disease limited to one lobe or to not more than two lobes. In the past five years the mortality rate of lobectomy has been lowered through improved technic and knowledge of indications to less than fifteen per cent in the hands of those experienced in this work.

Bronchiectasis is a progressive disease and bronchiectatic pockets have aptly been called the "cesspools of the lungs." Life is endangered because of toxic damage to the liver, heart, spleen, and other organs, and because bronchiectatic patients are subject to repeated attacks of pneumonia or interstitial pneumonitis. The average expectancy of a patient with definite suppurating

bronchiectasis is about fifteen years. The disease deserves respect and the patient active treatment.

INTERSTITIAL PNEUMONITIS

Interstitial pneumonitis constitutes a process pathologically and clinically distinct from lobar pneumonia or bronchopneumonia. In either type of pneumonia the infection is confined to the air-containing spaces—the bronchi, the bronchioles, and the alveoli—and it therefore has an opportunity for complete drainage through the mouth when resolution takes place. In interstitial pneumonitis the infection escapes into the fascial planes *surrounding* the bronchi, the bronchioles, and alveoli, and, having no adequate opportunity for complete drainage into the bronchial tree, it dissects along the interstitial spaces until large areas of the lung are involved. Infection beginning in one lobe tends to be limited to that lobe until the later stages when a bronchogenic spread of the infection may take place. This lack of adequate drainage accounts for the chronicity of interstitial pneumonitis, which is frequently called "unresolved pneumonia," and represents the so-called pneumonia which follows the aspiration of a foreign body or the obstruction due to a bronchial carcinoma. For this reason a bronchoscopic examination is indicated in all cases of interstitial pneumonitis to rule out the presence of some mechanical factor obstructing drainage, and to assist drainage by aspiration. It is from this interstitial pneumonitis that lung abscesses develop when the infection, trapped in the interstitial spaces, produces suppuration with increasing pressure, destruction of tissue, and finally rupture into a bronchus.

PNEUMONIA

Lobar pneumonia and bronchopneumonia (including postoperative pneumonia) are produced by two combining factors—infection plus bronchial obstruction—and interstitial pneumonitis will follow if the obstruction persists. Coryllos has shown that the factor which determines whether lobar or bronchopneumonia will occur is the viscosity and fibrin content of the exudate pro-

duced by the specific infection present, thick secretions of the pneumococcus causing atelectasis of an entire lobe and consequently lobar pneumonia, and the thin secretions of the streptococcus obstructing only smaller bronchi and producing bronchopneumonia. Relief of this obstruction is the rationale of the treatment of certain pneumonia patients with bronchoscopic aspirations.

POSTOPERATIVE PNEUMONIA

Thoracic surgeons, having determined the mechanism of postoperative atelectasis and pulmonary infection, have also outlined a routine for their prevention. For patients with sputum and for patients having operations upon the upper respiratory tract it is of particular benefit. Since infected secretions must be prevented from lodging in the bronchi and bronchioles, and if present must be coughed up, atropine has been eliminated from the preoperative medication, for it tends to make bronchial secretions viscid and difficult to raise. Patients with sputum of any sort are given a postural drainage before entering the operating room. All operations under general anesthesia are performed with the patient in the Trendelenburg position to prevent aspiration of mouth secretions, pus, or vomitus. Basal anesthetics which have a prolonged effect inhibiting the cough reflex are avoided. "Blowing out" a patient with five per cent carbon dioxide and ninety-five per cent oxygen is carried out at the conclusion of the operation, and similar inhalations are given every two hours afterwards and the patient encouraged to cough.

LUNG ABSCESS

Bronchoscopy is an important aid in the diagnosis and treatment of interstitial pneumonitis and its sequel, lung abscess. By the inflammation of the bronchial mucosa or the discovery of a bronchial obstruction due to granulation tissue, a foreign body, or a carcinoma, the lobe in which an abscess is located may be determined. In some cases the obstruction may be relieved by means of bronchoscopic bouginage, or the removal of tissue through the bronchoscope, and adequate drainage established.

The several measures which may be included in the conservative treatment of a lung abscess are bed rest, postural drainage every two hours, arsphenamine, bronchoscopic aspirations at four or five day intervals, temporary phrenic nerve interruption in selected cases, and possibly X-ray therapy. Artificial pneumothorax has been abandoned in many clinics as a dangerous procedure in the treatment of lung abscess because of the possibility of tearing the lung at the base of an adhesion, causing a sudden total collapse of the lung, or a virulent massive empyema.

Summarizing 205 cases of lung abscess recently, Brunn reports that thirty-one per cent were "improved" under a conservative regime, thirty-five per cent died, and thirty-four per cent required open surgical drainage. Twenty per cent of those "improved" by these measures, however, had recurrences, and sixty-nine per cent of those died.

Of those treated by the generally accepted two-stage open drainage, sixty-eight per cent were "improved" with only five per cent recurrences. Picking out the ten cases which came to surgery within 100 days of the onset of the illness and which were operated upon by the two-stage method, eighty per cent were "improved" with no recurrences.

The important factors in the successful treatment of lung abscesses are adequate and constant drainage, aeration of the cavity or cavities to combat anaerobic organisms, and collapse of the cavity walls before they become too rigid with scar tissue to contract. It is obvious that a number of lung abscesses, with the aid of postural drainage and bronchoscopic aspirations, may be adequately drained by the bronchial route. However, when a patient continues to have bouts of fever, and the daily output of sputum fluctuates widely in amount, and when X-ray films fail to show a marked improvement after a few weeks of bronchial drainage, then open transpleural drainage is indicated.

In certain cases of chronic lung abscess, lobectomy offers the only hope of cure.

MASSIVE ATELECTASIS

When postoperative massive atelectasis occurs, failure to relieve it by the usual measures of posture, shaking, and carbon dioxide and oxygen inhalations is an indication for bronchoscopic aspiration of the mucous plug or other obstruction which causes it.

MEDIASTINAL ABSCESS

Retropharyngeal abscesses, as well as those suppurations which occur in the deep cervical glands as the result of infection draining from the mouth and throat, have a free passage into the mediastinum both by lymphatic communication and by direct extension. The neck is divided into an anterior and a posterior compartment by the mesial extensions of the deep cervical fascia which form the carotid sheaths and the prevertebral fascia and which extend downward to envelop the subclavian vessels. This fascial wall causes most of the infections of the deep cervical glands and retropharyngeal region to enter the posterior mediastinum.

Rib resection and extrapleural drainage at the most dependent portion of the abscess are indicated and in most instances readily performed without entering the pleural cavity when the dissecting finger is kept closely pressed against the bodies of the vertebrae.

CONCLUSION

The otolaryngologist and thoracic surgeon are associated in the diagnosis and treatment of diseases of the respiratory tract which are not anatomically limited to the field of either. Cooperation between both groups of surgeons is essential to the patient's best interest.

DISCUSSION

DR. FRANK L. ALLOWAY (Kingsport): This is a timely paper and too much stress cannot be placed upon this relationship between the thoracic surgeon and the otolaryngologist that does bronchoscopy.

As a diagnostic method in pulmonary disease, bronchoscopy has few contraindications. Only aortic aneurysm, recent hemorrhage, active tuberculosis or moribund patients offer any trouble.

In tuberculosis of the larynx, we often note a marked improvement following thoracoplasty and other special operations on the chest.

Lung abscess of nontuberculous origin can be studied through the mouth without general anesthesia or can be drained, thus taking the load off the drowned cilia for a time. This often allows the spontaneous mechanism of drainage to be reestablished and the defensive power of the lung to be restored. If this does not take place, then the case becomes one for the thoracic surgeon.

Pneumonography with lipiodol should be mentioned. This should be done either by the simple method I have devised or, when a fistula is thought to be present, by the bronchoscopic method. With this pneumonogram as a basis, a consultation should be held between the internist, the thoracic surgeon, and the bronchoscopist as to the best procedure to take.

Carcinoma of the bronchus—here we have to deal with a mild, slowly metastasizing disease. Early diagnosis by bronchoscopy and histologic confirmation is easily and safely obtained by the endoscopic removal of a specimen with the longer type of forceps. Metastases cannot travel far in eighteen hours, in which time a histological examination should be made.

Surgery consisting of lobectomy, pneumonectomy, and even in a few cases removal of the tumor by the bronchoscopic route. The bronchoscope will be more a factor in diagnosis than in the removal or cure of these cases.

On one point I differ a little as to the benefit of radiation as I have seen two cases at the Diagnostic Center in Washington that are living after five years following deep roentgen ray treatment.

DR. STEWART LAW WILL (Chattanooga): Dr. Carr has given us a very interesting summary of the interrelation between the two specialties of the thoracic surgeon and the otolaryngologist. There are many connecting links between the two specialties which should be borne in mind whenever we see a case of upper respiratory disease, complicated by some more or less obscure pulmonary symptoms. So much is being done today by the thoracic surgeon that it is well to bear in mind the full scope of his activities. It is most remarkable what can be done in the way of complete lobectomy and abscess drainage by the thoracic surgeon. Malignancies of the lungs and mediastinum no longer offer the hopeless, unapproachable problem that they formerly did. The statistics of such men as J. Alexander, Hart, Ballou, and Idem have brought a new era in prognosticating serious lung diseases. Bronchoscopy has made equal strides with thoracic surgery. Today, many malignancies within the lungs are diagnosed and treated successfully with the bronchoscope. A few weeks ago it was my privilege to spend several days at the Chevalier Jackson Clinic in Philadelphia where I saw numerous cases in process of treatment. I was particularly impressed by one case of a woman who had persistent hemoptysis, cough, and loss of weight with evening rise of temperature. The natural assumption in this case would have been

one of pulmonary tuberculosis with pulmonary hemorrhage. X-rays of the chest were negative for tuberculosis as were other physical signs. By the bronchoscope this was diagnosed as a primary carcinoma of the left bronchus. It was treated by excision and radon transplantations through the bronchoscope, and Dr. Jackson assured me that they had had several of a similar condition, in which treatment by this means had been most successful. All cases of unexplained chest symptoms will warrant not one but repeated bronchoscopic examinations. Many obscure conditions will thus be cleared up. Lung abscesses will often need treatment by repeated suction through the bronchoscope. There are other conditions of pulmonary suppuration which can be treated best by total lobectomy by the thoracic surgeon. For this, of course, the patient's disease should be known to be confined to one lobe as determined by lipiodol roentgenograms of all five lobes. Previous to this, certain therapeutic measures should be given adequate trial for months or even a year or more be-

fore a decision is made to perform a lobectomy. Phrenicectomy, postural drainage, treatment of sinus, throat, and ear infections, and one or more courses of bronchoscopic aspirations are all included within the more conservative measures to be instituted before deciding upon the more serious thoracic surgery. Dr. Carr has already mentioned the fact that well-advanced pulmonary tuberculosis is often first diagnosed by the otolaryngologist. Here again phrenicectomy, pneumothorax, and thoracoplasty constitute part of the treatment indicated in these complicated respiratory conditions. Thus it will be seen that there is a definite need for the thoracic surgeon by the otolaryngologist who wishes to do the very best for his patients.

We are all indebted to Dr. Carr for his kindness in presenting this paper on such a timely subject. It should not only enhance our knowledge but should stimulate further study and investigation in this subject so closely allied to that of our own. I have enjoyed Dr. Carr's paper most thoroughly.

Do Not Forget

The Annual Meeting

of the

Tennessee State Medical

Association

Memphis

April 14, 15, 16

Hotel Gayoso—Headquarters

THE JOURNAL

OF THE

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H. H. SHOULDERS, M.D., Editor and Secretary

MARCH, 1936

EDITORIAL

AN IMPORTANT OPINION CONCERNING THE RIGHT OF A CORPORATION TO PRACTICE MEDICINE

Some years ago an eminent medical authority in the United States asserted that a corporation cannot practice medicine. The profession of medicine of the United States has held to this view and, in our opinion, very properly so.

Insofar as we are aware the following opinion handed down by the Supreme Court of Illinois is the first judicial opinion rendered on the subject by a superior court.

The subject is of such importance and this opinion is of such importance that it is being reproduced in full. Any attempt on our part to abbreviate it or to edit it, so to speak, would be injurious.

UNITED STATES OF AMERICA
STATE OF ILLINOIS, SS.

At a Supreme Court, begun and held in Springfield, on Tuesday, the fourth day of February, in the year of our Lord One Thousand Nine Hundred and Thirty-Six, within and for the State of Illinois.

Present:

Chief Justice Clyde E. Stone
Justice Warren H. Orr
Justice Lott R. Herrick
Justice Norman L. Jones
Justice Elwyn R. Shaw
Justice Norman L. Jones
Justice Paul Farthing
Justice Francis S. Wilson

Otto Kerner, Attorney General
Warren C. Murray, Marshal
Attest: Adam F. Bloch, Clerk

Be It Remembered, that afterward, to-wit, on the 14th day of February, 1936, the opinion of the Court was filed in said cause and entered of record in the words and figures following, to-wit:

THE SUPREME COURT OF ILLINOIS

February 14, 1936

People State of Illinois by Otto Kerner, as Attorney General, Appellee, vs. United Medical Service, Inc., Appellant. No. 23169. Appeal from Superior Court Cook.

Mr. Justice Wilson delivered the opinion of the court:

The Attorney General of the State of his own accord filed a verified petition in the superior court of Cook County for leave to file an information in the nature of a *quo warranto* to require United Medical Service, Inc., a domestic corporation, to show by what warrant it holds a franchise to practice medicine or any of its branches or any system of treating human ailments. The permission sought was granted, and an information containing the same allegations as the petition was filed. Thereafter the respondent moved to vacate the order and to strike the information on the ground that it was filed in violation of section eight of the Quo Warranto act. The motion was allowed and the respondent was ordered to plead, answer or demur to the petition instead of to the information. The respondent filed nine pleas to the petition and a single replication was filed to the pleas. General and special demurrers were interposed to eight of the replications. In lieu of settling the pleadings and proceeding to a trial the parties elected to present an agreed case conformably to Rule 48 of this court and stipulated the facts. The statement of the agreed case presented to the trial court consisted of the stipulation of facts and of thirteen questions of law. After an extended hearing the court found the respondent guilty as charged and rendered judgment of ouster against it. From that judgment the respondent prosecutes this appeal.

The respondent was incorporated as a

corporation for profit on December 15, 1930, with an authorized capital of 400 shares of common stock, having a par value of \$100 per share. Although its statement of incorporation enumerates seven objects for which it was formed, the pursuit of only one is assailed in this case, namely, the promotion of individual and public health through the study, prevention and treatment of disease.

The agreed statement of facts shows that in 1933 the respondent established in Chicago a clinic, designed and denominated by it as a fixed-fee, low-cost medical service, with fully equipped offices to provide for the examination and treatment of all physical and mental ailments; that since 1933 it has continuously maintained the clinic and offices, and that all medical and surgical services which the respondent offers are rendered solely by physicians and surgeons licensed and registered by the State of Illinois. It also appears that on several occasions since 1933 the respondent has published announcements of its character and purpose in the form of paid advertisements in the public press, one of which states that the corporation itself is not a charity, nor is it associated with or supported by any charity, philanthropic, educational or tax-supported organization, and affirmatively declares that it is organized for profit. Charges for specific medical services, such as examinations of the heart, the lungs, the eyes, ears, nose and throat, and four other so-called regional examinations, laboratory examinations and X-ray examinations, are set forth in the advertisement. With respect to the medical staff this advertisement announces: "All essential medical service in general health and diagnostic examinations and treatment will be rendered to patients by competent physicians trained and experienced in their respective fields of medicine and registered under the laws of the State of Illinois." Persons seeking and receiving examinations and treatments in and through the clinic enter into contracts with the respondent, and the latter receives the fees for such services and pays the physicians and surgeons in its employ their remuneration. The corporation itself

has never applied for or received a license to practice medicine in Illinois.

The respondent contends that the trial court lacked jurisdiction to enter a judgment of ouster because the record contains neither an order granting leave to file an information nor an information. The record in the present case discloses that the information filed pursuant to leave granted was stricken upon the respondent's motion, which specifically charged that the proceeding did not conform to section 8 of the Quo Warranto act. Section 1 of this statute, (Ill. State Bar Stat. 1935, p. 2518; Smith's Stat. 1935, p. 2569;) so far as pertinent to this inquiry, provides that in case any domestic corporation exercises powers not conferred by law, the Attorney General, or State's attorney of the proper county, either of his own accord or at the instance of any individual relator, may present a petition to any court of record of competent jurisdiction for leave to file an information in the nature of a *quo warranto* in the name of the People of the State of Illinois, and that if such court shall be satisfied that there is probable ground for the proceeding it may grant the petition and order the information to be filed and process to issue. Section 8, approved July 6, 1933 (Laws of 1933, p. 856), and in force when this action was instituted, declares that it shall be unnecessary hereafter in any action of *quo warranto* to set out the cause of action in the writ, but that it shall be sufficient to summon the defendant in a summons in the usual form, commanding him to appear and answer the plaintiff in an action of *quo warranto*, and that the issue shall be made up by answering, pleading or demurring to the petition as in other cases. This section was taken from, and its language is identical with, section 15 of the Practice act of 1907 to the extent that the latter relates to *quo warranto* proceedings. (Cahill's Stat. 1931, p. 2173; Smith's Stat. 1931, p. 2194.) Section 15 was exactly the same as section 10 of the Practice act of 1872 and was in force when the Quo Warranto act was revised in 1874. The new section of the Quo Warranto act deals only with the form of summons and the manner

in which the issues shall be made up. It does not conflict with any of the preceding sections of the statute, but is in entire harmony therewith. *People v. Moeckel*, 256 Ill. 598.

The respondent, in its motion to strike the information, did not charge that probable ground for the proceeding was wanting. Following the entry of the order striking the information the respondent pleaded to the petition, which charged that by means of its corporate franchise the respondent had unlawfully usurped the franchise of engaging in the practice of medicine and in the diagnosis and treatment of the diseases of human beings as governed by the Medical Practice act. The petition and the information in this particular proceeding contain identical allegations and make the same charges. Furthermore, the parties entered into a stipulation by which they submitted an agreed case to the trial court, as provided for by the Civil Practice act and Rule 48 of this court. They expressly stated that the agreed case contained the points of law at issue between them, and that "the court shall decide thereon and shall render judgment therein, according as the rights of the said parties in law may appear." An examination of the "statement of agreed case" shows that the respondent did not raise the question of whether the filing of an information was prerequisite to the rendition of the judgment of ouster against it. While jurisdiction of the subject matter cannot be waived, the method of acquiring jurisdiction of a particular case and irregularities in respect thereto may be waived. The defendant, in a case in which the court has general jurisdiction, may dispense with process altogether, waive irregular process and appear. (*Wilson Bros. v. Haege*, 347 Ill. 140; *Brown v. VanKeuren*, 340 id. 118.) The respondent is not in a position to challenge the method of making up the issues, as it induced and acquiesced in the procedure which it now attacks.

The next contention is that sections 8, 82, 83, 84, and 85 of the Business Corporation act deprived the trial court of jurisdiction to determine the issue made up in

a *quo warranto* action under the provisions of the Quo Warranto act. Section 148 of the Corporation act in effect prior to July 13, 1933 (Cahill's Stat. 1931, p. 756; Smith's Stat. 1931, p. 767), provided that when any domestic corporation, under color of any of the powers granted by the statute, committed any act in excess of such powers, such act should be voidable at the instance of the Attorney General, in a direct proceeding in the nature of a *quo warranto* instituted by him against the offending corporation. Section 1 of the Quo Warranto act was also in force, and provided, among other things, that when any domestic corporation (1) did or omitted any act which amounted to a surrender or forfeiture of its rights and privileges as a corporation, or (2) exercised powers not conferred by law, the Attorney General, or State's Attorney of the proper county, either of his own accord or at the instance of any individual relator, should commence *quo warranto* proceedings. By section 6 it was further provided that if the corporation should be deemed guilty the court might give judgment of ouster against the corporation from the franchise. The section also provided that instead of judgment of ouster from a franchise for an abuse thereof, unless the court is of the opinion that the public good demands such judgment, the court may fine the corporation found guilty in any sum not exceeding \$25,000 for each offense.

The Business Corporation act effective July 13, 1933, expressly repealed the Corporation act of 1919 as amended. The new Corporation law contains no provision for a *quo warranto* action, nor does it purport to repeal the portion of section 1 of the Quo Warranto act under which this action was brought. The respondent argues, however, that since the Business Corporation act is complete in itself, governing the whole field of corporations for profit, and expressly repealing the Corporation act of 1919, it also repealed, by implication, all other existing statutes to the extent that they were inconsistent with the latter statute. Specifically, the respondent asserts that section 1 of the Quo Warranto act, to the extent that it provides a remedy in an action of *quo warranto* for the exercise

of powers not conferred by law, has been abrogated by sections 8, 82, 83, 84, and 85 of the Business Corporation act. Section 8 (Ill. State Bar Stat. 1935, p. 850; Smith's Stat. 1935, p. 809) relates to the defense of *ultra vires*. It provides, in part, that no limitation upon the business, purposes or powers of a corporation shall be asserted in order to defeat any action at law or in equity between the corporation and a third person, or between a shareholder and a third person, involving any contract to which the corporation is a party, or any right of property or any alleged liability of whatsoever nature, but such limitation may be asserted, "(c) in a proceeding by the State, as provided in this act, to dissolve the corporation, or in a proceeding by the State to enjoin the corporation from the transaction of unauthorized business." Subdivision (c) of section 8 refers to and is controlled and limited by the qualifying language set forth. The remedy by injunction to restrain the corporation from the transaction of unauthorized business is not applicable, because the present case is not one "at law or in equity between the corporation and a third person or between a shareholder and a third person involving any contract to which the corporation is a party or any right of property or any alleged liability of whatsoever nature." Recourse to sections 82, 83, 84, and 85 of the Business Corporation act cannot avail the respondent, as those sections purport to relate solely to, and by their express provisions deal with, involuntary dissolution and receivership. Section 82 provides, in part, that a corporation may be dissolved involuntarily by a decree of a court of equity, upon information filed by the Attorney General, when it is made to appear to the court that "(c) the corporation has continued to exceed or abuse the authority conferred upon it by law, or has continued to violate any section or sections of the Criminal Code of the State of Illinois after a written demand to discontinue the same shall have been delivered by the Secretary of State to such corporation." Sections 82 and 83 are declaratory of the common law right of the sovereign to dissolve corporations which violate its laws. (*People v.*

Blue Rose Oil Co., 360 Ill. 397.) The relator concedes that the respondent is lawfully empowered to pursue some of its expressed objects, and this action is directed against only one of its activities, namely, the treatment of disease as a business for monetary gain. The Attorney General does not seek to dissolve the corporation nor to place it in receivership. The facts do not bring the case within the contemplation of the express provisions of the Business Corporation act.

In support of its contention the respondent, however, invokes the familiar canon of statutory construction, that the revision of a subject by a later statute evinces a legislative intention to substitute its provisions for the earlier law upon the same subject. (*People v. Gould*, 345 Ill. 288; *Village of Atwood v. Cincinnati, Indianapolis and Western Railroad Co.*, 316 id. 425.) It is equally well established that the repeal of laws by implication is not favored, and it is only where there is a clear repugnance between two laws and the provisions of both cannot be carried into effect that the later law will prevail and the earlier one be considered repealed by implication. (*People v. West Englewood Bank*, 353 Ill. 451; *Galpin v. City of Chicago*, 249 id. 554.) Where two statutes successively enacted, with relation to the same subject, are seemingly repugnant, it is the duty of the courts so to construe them, if possible, that the subsequent act will not repeal the antecedent one by implication, and, if two constructions are possible, that one will be adopted which operates to support rather than to repeal the earlier act by implication. *Walgreen Co. v. Industrial Com.*, 323 Ill. 194; *Village of Glencoe v. Hurford*, 317 id. 203; *People v. Burke*, 313 id. 576.

It may be conceded, as the respondent insists, that sections 82, 83, 84, and 85 of the Business Corporation act of 1933 are the counterpart, among others, of section 148 of the earlier act. This concession, however, cannot avail the respondent, for it does not follow that section 1 of the Quo Warranto act, concerned, in part, with the corporate exercise of powers unlawfully conferred, is superseded by the sections of

the Business Corporation act which provide for the involuntary dissolution and receivership of corporations by informations in equity. There is no inconsistency or repugnance in the language of the statutes, since the Quo Warranto act expressly provides for *quo warranto* proceedings where a corporation exercises powers not conferred by law. This the Business Corporation act does not prescribe. Had the General Assembly intended to repeal any part of section 1 of the Quo Warranto act it would undoubtedly have employed appropriate language to accomplish that purpose.

Complaint is made that the legal remedy of *quo warranto* was not available to the Attorney General in this cause because adequate remedies obtain under the general equity powers of the courts and under the express provisions of the Medical Practice act. Upon the basis of the agreed facts the relator maintains that the respondent corporation is engaged in the treatment of disease for profit—a power not conferred upon it by law. It is true that one of the corporate objects found in the certificate of incorporation is the prevention and treatment of disease for profit. Whether the certificate of incorporation, however, confers such rights and powers as are authorized is a matter for judicial determination. When a corporation for profit is formed under the general act, the law, and not the statement or the certificate, must determine what powers can be exercised. (*People v. Chicago Gas Trust Co.*, 130 Ill. 268.) The relator charges in the present case that there has been a usurpation or unlawful assumption of a franchise by the respondent. A corporate franchise proceeds from the sovereign power, and the people have the right at all times to inquire into the title by which such a franchise is claimed or exercised and to have a judgment of ouster if the franchise was improperly granted. (*People v. Larsen*, 265 Ill. 406.) The only relief sought and obtained in this case was the ouster of the corporation from the assumption and usurpation of a franchise charged to have been improperly granted to it. This improper

grant of power is being used, it is charged, in violation of the Medical Practice act. *Quo warranto* therefore properly lies. High on Extraordinary Remedies (3d ed.) see. 627; 22 R. C. L., p. 682; *People v. Ridgley*, 21 Ill. 65.

It is also claimed that the provisions of the Medical Practice act afford a proper remedy for prosecuting the respondent. Section 24 of the statute (Ill. State Bar Stat. 1935, p. 2055; Smith's Stat. 1935, p. 2047) provides: "If any person shall hold himself out to the public as being engaged in the diagnosis or treatment of ailments of human beings * * * and shall not then possess in full force and virtue a valid license issued by the authority of this State to practice the treatment of human ailments in any manner, *he* shall be guilty of a misdemeanor," and subject to punishment by fine of not less than \$100 nor more than \$500, or by confinement in the county jail for not more than one year, or both fine and imprisonment, in the discretion of the court. From the express language of the statute it is apparent that the penalties prescribed are directed against individuals practicing medicine without licenses. The punishment by incarceration provided by the Medical Practice act is not applicable to corporations practicing medicine and is obviously directed against individuals. Under the statute the maximum fine fixed for a violation of the provisions against practicing medicine without a license is \$500. If section 24 applies to both corporations and individuals the only method of punishing a corporation is by fine. On the other hand, when a judgment is entered under the Quo Warranto act for the exercise of power illegally granted it is that of ouster, or, in the discretion of the court, a maximum fine of \$25,000. Under the circumstances of this case it is clear that section 24 of the Medical Practice act does not afford an adequate remedy and would not prevent recurrences of the unlawful exercise of a power improperly conferred upon corporations such as the respondent. Furthermore, the present proceeding is not a criminal proceeding and criminal conduct is not charged. While a proceeding by in-

formation in the nature of a *quo warranto* is a substitute for the ancient writ and retains the character of a criminal prosecution to the extent that the proceeding is in the name of the people and criminal in form, it is a civil remedy calling upon the defendant to show by what warrant a franchise or privilege is exercised. (*People v. Barber*, 289 Ill. 556; *People v. Drainage Comrs.*, 282 id. 514; *Independent Medical College v. People*, 182 id. 274.) The precise question presented here, whether a corporation may lawfully engage in the practice or treatment of human ailments and the treatment of disease as a business, is not a criminal question.

The respondent next contends that since section 2 of the Medical Practice act does not state what act or acts may be regarded as constituting the practice of a system or method of treating human ailments, jurisdiction to render the judgment of ouster was wanting. The title of the statute is, "An act to revise the law in relation to the practice of the treatment of human ailments for the better protection of the public health and to prescribe penalties for the violation hereof." Section 2 provides that no unlicensed person shall practice medicine or any of its branches, or midwifery, or any system or method of treating human ailments without the use of drugs or medicines and without operative surgery. The third section prohibits the issuance of a license to any person unless he passes an examination of the qualifications therefor by and satisfactory to the Department of Registration and Education. The next section declares that each applicant for such examination shall, among other things, submit evidence under oath satisfactory to the department that he has attained the age of twenty-one years, that he is of good moral character, and that he has the preliminary and professional education required by the Medical Practice act. Section 5 fixes minimum standards of professional education to be enforced by the department in conducting examinations and issuing licenses. Section 24 specifically prohibits the performance of certain acts unless a license has been issued, namely,

the diagnosis and treatment of ailments of human beings; the prescription of a form of treatment for the palliation of physical ailments of persons with the intention of receiving compensation therefor; and the maintenance of an office for the examination and treatment of persons afflicted or supposed to be afflicted by any ailment.

The title of the Medical Practice act is broad enough to include not only the practice of medicine in all its branches, but also the limited treatment of human ailments without drugs or medicine. The legislative intent manifest from a view of the entire law is that only individuals may obtain a license thereunder. No corporation can meet the requirements of the statute essential to the issuance of a license. From the stipulated facts it appears that the respondent has been engaged in the pursuit of activities which, under section 24, it could not pursue without a license. It is clear that the respondent, owing to its corporate character, cannot obtain a license to engage in the practice of medicine. The mere fact that in a criminal prosecution of an individual for a violation of the Medical Practice act it is necessary to specifically charge in the indictment the act or acts which compose the offense of practicing a system or method of treating human ailments without a license (*People v. Brown*, 336 Ill. 257) cannot avail the respondent in this case as it is not charged with the commission of a criminal offense. Whether the statute expressly defines what constitutes the practice of a system or method of treating human ailments is therefore immaterial in the present proceeding.

The respondent corporation earnestly contends that the ownership of a clinic, with offices where the treatment of disease is engaged in solely by licensed and registered physicians and surgeons who are employed by the corporation which receives the fee charged the patients, does not constitute the practice of medicine by the corporation. The respondent argues that the fact that the contract of payment for the medical services to be rendered is made between the corporation and the patient does not change the professional relation-

ship between the patient and the various licensed and registered practitioners who treat him in the corporation's office. To support its contention the respondent places reliance upon *State v. Brown*, 37 Wash. 97, in which the statute attacked required an examination and license in order to "own * * * run or manage" a dental office. The decision that this statute was void, and also the decisions in *State Electro-Medical Institute v. Platner*, 74 Neb. 23, and *State Electro-Medical Institute v. State*, 74 id. 40, cited by the respondent, are contrary not only to the views of this court expressed in *Winberry v. Hallihan*, 361 Ill. 121; *Dr. Allison, Dentist, v. Allison*, 360 id. 638; and *People v. Peoples Stock Yards Bank*, 344 id. 462, but also to the weight of authority. (*People v. Woodbury Dermatological Institute*, 192 N. Y. 454; *State v. Bailey Dental Co.*, 211 Iowa 781; *People v. Painless Parker, Dentist*, 85 Colo. 304; *Parker v. Board of Dental Examiners*, 216 Cal. 285.) In the recent case of *Dr. Allison, Dentist, v. Allison, supra*, this court observed that the practice of a profession is subject to licensing and regulation and is not subject to commercialization or exploitation. "To practice a profession," the court said, "requires something more than the financial ability to hire competent persons to do the actual work. It can be done only by a duly qualified human being, and to qualify something more than mere knowledge or skill is essential. * * * No corporation can qualify."

Our attention is directed to the fact that no provision of the Business Corporation act, or of any other statute of this State, prohibits a corporation organized for profit from rendering any and all medical services by duly licensed and registered physicians and surgeons. The misuse of power sought to be coerced in this case is a right and privilege which individuals only may obtain by compliance with the provisions of the Medical Practice act. It is true that both section 2 of the Corporation act of 1919 as amended and section 3 of the Business Corporation act provide, with certain named exceptions not material in this case, that corporations for profit may be organ-

ized for any lawful purpose. Manifestly, the Business Corporation act, in authorizing the formation of corporations for "any lawful purpose," does not purport to include the practice of the learned professions, such as medicine and law.

The final contention of the respondent corporation which requires consideration is, that insofar as the Medical Practice act prohibits it from practicing medicine by employing licensed physicians and surgeons to that end, the act is an unreasonable exercise of the police power and transcends the due process of law clauses of sections 2 and 14 of article 2 of the constitution of this State and the first section of the fourteenth amendment to the Federal constitution. The police power of the State includes the power to enact comprehensive, detailed, and rigid regulations for the practice of medicine, surgery, and dentistry. (*Douglas v. Noble*, 261 U. S. 165; *Dent v. West Virginia*, 129 id. 114; *People v. Witte*, 315 Ill. 282.) There is no right to practice medicine which is not subordinate to the police power. (*Lambert v. Yellowley*, 272 U. S. 581; *People v. Walsh*, 346 Ill. 52.) The Medical Practice act of 1923 recognizes the different methods of treating human ailments and prescribes reasonable and uniform regulations for testing the qualifications of persons who desire to practice medicine in all its branches and persons who desire to practice some limited form of treating human ailments. *People v. Walder*, 317 Ill. 524; *People v. Witte, supra*.

Reliance is placed, however, on *Liggett Co. v. Baldrige*, 278 U. S. 105, a case involving the validity of a statute of the commonwealth of Pennsylvania which provided that every pharmacy or drugstore should be owned only by a licensed pharmacist, and that no corporation, association or co-partnership should own one unless all the members or partners were licensed pharmacists. The State Board of Pharmacy refused to grant the Liggett Company a permit to carry on its business on the ground that all of the stockholders of the corporation were not pharmacists. It appears that the corporation was conducting an ordinary business—namely, the operation of a drug-

store—and that it neither engaged in nor assumed to practice a profession. The United States Supreme Court, in holding the act invalid, observed that mere stock ownership in a corporation owning and operating a drugstore could have no real or substantial relation to the public health, and that the statute was, accordingly, an unreasonable and unnecessary restriction upon private business. The Pennsylvania act did not purport to deal with the requirements for engaging in a profession. It does not follow that because a person may have a constitutional property right to operate a drugstore he has a like absolute right to engage in the practice of professions such as medicine, dentistry or law. Neither a natural person nor an intangible entity can complain if unable to fulfill the requirements reasonably prerequisite to obtaining a license to engage in a particular profession. Manifestly, the case of *Liggett Co. v. Baldrige*, *supra*, is not parallel with the case at bar. We find nothing in that case which conflicts with the well-established rule that the State may deny to corporations the right to practice professions and insist upon the personal obligations of individual practitioners. *Smiler v. Dental Examiners*, 294 U. S. 608; *Winberry v. Hallihan*, *supra*; *People v. Peoples Stock Yards Bank*, *supra*; *People v. Painless Parker, Dentist*, *supra*; *Parker v. Board of Dental Examiners*, *supra*.

The judgment of the superior court is right, and it is therefore affirmed.

Judgment affirmed.

THE STATE MEETING

On another page of this issue of the JOURNAL will be found a tentative list of numbers that will appear on the scientific program of the meeting of the Tennessee State Medical Association to be held in Memphis April 14, 15, 16.

The good which medical men may derive from such a meeting may be classified under three heads: First, educational. It is not possible for a doctor to keep abreast of the developments in medicine without such meetings. Second, inspirational. We need the inspirational effects of personal con-

tacts, addresses, etc. Third, fellowship. The promotion of good fellowship in the profession is one of the greatest accomplishments of organized medicine. If doctors were never brought together in such meetings there is little telling what the confusion, jealousy and envy might amount to. When we learn to know people better we generally are able to see more virtues and fewer faults in them. We often see local professional jealousies disappear when regular meetings of a local society are held with good attendance. There are many other reasons why one should attend the meeting of his own state society which go with the spirit of giving and with getting. It is not feasible to enumerate them. All of us should go if possible. We should go with the idea that we may give something, but always get more than we give.

DEATHS

Dr. Percy A. Perkins, Memphis; University of Virginia, Department of Medicine, 1908; aged 53; died February 20, following an illness of eight days with pneumonia.

RESOLUTIONS

RESOLUTIONS ON THE DEATH OF DR. JOHN P. GRISARD

Whereas, Dr. John P. Grisard, a charter member and for many years secretary of the Franklin County Medical Society, died at his home in Winchester, November 26, 1935, we wish to express our gratitude for his devotion to his profession and his loyal fellowship.

Dr. Grisard was born in 1877, descending from a long line of Franklin County physicians. He was graduated from the University of Tennessee in 1901, and served his community faithfully for more than a generation.

By his death we have lost from our profession a valued member, from our society a dynamic spirit, and from our community an eminent citizen. We who knew him have reason to mourn the loss of a friend and

colleague, and his counsel and assistance will be missed.

In recognition of his character and service, the Franklin County Medical Society extends to his family and relatives its deep sympathy in their loss.

Resolved, that a copy of these resolutions be sent to the family, a copy to THE TENNESSEE STATE MEDICAL JOURNAL, and that a copy be written into the minutes of the Franklin County Medical Society.

R. M. KIRBY-SMITH, M.D.,

J. M. HARDY, M.D.,

Committee.

RESOLUTIONS ON THE DEATH OF DR. JOHN H. REVINGTON

On January 27, 1936, the Chattanooga and Hamilton County Medical Society lost one of its most active and valued members and past presidents in the death of Dr. John H. Revington. He was born in Chattanooga, Tennessee, forty-five years ago and lived his entire life here. Dr. Revington received his early education in the schools of Chattanooga, premedical education at the University of Alabama, then entered the Medical Department of the University of Tennessee, where he was graduated in 1913. He received his internship work at Memphis General Hospital. Dr. Revington returned to Chattanooga and entered the practice of medicine and surgery in 1914, and made a phenomenal success of same.

Dr. Revington married Miss Annie Bachman, May 31, 1916. He was commissioned a first lieutenant in the army during the World War and later served with the Rockefeller Institute for research work.

Dr. Revington was very active in the medical societies of the county, state, and surgeons club, having been president of the Hamilton County Medical Society in 1929, and at the time of his death was a counselor in the state society. He was exceptionally active in the crippled children's work of the American Legion and gave freely of his time and skill to the unfortunate. He was a great lover of clean sports, hunting, fishing, golfing, and football, and was a star player on the football team of his alma mater.

Dr. Revington was a competent and resourceful surgeon, thorough and painstaking in his work, a leader in organized medicine, and held the highest esteem of his fellow members throughout the state.

Be It Therefore Resolved, That the Chattanooga and Hamilton County Medical Society deeply deplores the passing of Dr. Revington.

And Be It Further Resolved, That we extend to his bereaved family our sincere sympathy and condolence.

And Be It Further Resolved, That a copy of this preamble and these resolutions be sent to the family of the deceased, a copy spread upon our record book, and a copy sent the secretary of the state medical society.

JOHN W. BRADLEY, *Chairman*;

H. P. LARIMORE,

B. S. WERT,

W. E. ANDERSON,

J. B. MCGHEE,

E. S. BLAIR.

Memorial Committee.

Approved: February 6, 1936.

D. N. WILLIAMS, *President*.

J. MARSH FRERE, *Secretary*.

Whereas, it is the custom and desire of the Chattanooga Surgeons Club to sponsor and to maintain among its members the ties of friendship and regard that strongly exist among men who are drawn together by common interest, sympathetic understanding, and close contact, and

Whereas, it is likewise the custom and desire to honor and to commemorate the memories of its members who are taken from us by death, and to perpetuate in our hearts those ties that are thereby broken, yet remain unbroken, and

Whereas, John H. Revington has been taken from us by untimely death.

Be It Resolved, That the Chattanooga Surgeons Club meet to do honor to the memory of John H. Revington, and in informal testimonials from each member to review those loving attributes that bound him to all that knew him, and to recall a few of the many acts of kindness and generosity that he bestowed on the unfortunate with-

out expectation of material reward, but out of the greatness of his heart, and to express the great sorrow that each member feels for himself at the loss of his friend, and for the club at the loss of his loyal support, his wise counsel, and his active leadership.

Be It Further Resolved, That a copy of these resolutions be filed in the archives of the Chattanooga Surgeons Club, and that a copy be sent to the bereaved family.

A. M. PATTERSON,
H. QUIGG FLETCHER,
EDWARD T. NEWELL,

Resolutions Committee, Chattanooga Surgeons Club.

TENTATIVE PROGRAM

The following is a tentative list of numbers that are to appear on the state program in Memphis.

This is not final as to numbers or arrangement. It will give some idea of excellence of the program that will be presented.

The Program Committee

H. H. SHOULDERS, *Chairman*,
W. J. SHERIDAN,
A. F. COOPER,
JESSE C. HILL.

Guest Speakers

Dr. John B. Steele, Chattanooga, Presidential Address.

Dr. James S. McLester, President, American Medical Association, Birmingham, Ala.

Dr. M. Hayward M. Post, Washington University, St. Louis, "Tuberculin Therapy in Ocular Tuberculosis."

Dr. John S. Coulter, Northwestern University, Chicago, "Physical Therapy in Chronic Arthritis."

"Bilateral Cystic Teratomata of the Ovaries—Report of a Case with Slides," Dr. Cecil E. Newell, Chattanooga.

"Local Anesthesia in the Reduction of Fractures, with Lantern Slides," Dr. E. Dunbar Newell, Chattanooga.

"Important Points in Prostatic Surgery of Interest to the General Practitioner," Dr. G. Madison Roberts, Chattanooga.

"The So-Called Subacromial Bursitis," Dr. Chas. F. Clayton, Knoxville.

"Afebrile Exhaustive Psychosis Following Sickness," Dr. Jesse C. Hill, Knoxville.

"A Study of Toxemia of Late Pregnancy," Dr. E. G. Wood, Knoxville.

"Poliomyelitis," Dr. W. L. Poole, Johnson City.

"An Evaluation of Radiation in Certain Diseases of the Female Pelvis," Dr. W. D. Anderson and Dr. W. S. Lawrence, Memphis.

"Some Genitourinary Diseases with Abdominal Symptoms," Dr. I. G. Duncan, Memphis.

"Ocular Tuberculosis," Dr. E. C. Ellett, Memphis.

"Symptoms of Peptic Ulcer," Dr. E. D. Mitchell, Jr., Memphis.

"Pyloric Stenosis in Children, with a Few Modifications in Technique," Dr. James W. Bodley, Memphis.

"Urinary Antiseptics," Dr. George R. Livermore, Memphis.

"The Duties and Functions of the Committee on Education," Dr. O. S. Warr, Memphis.

"A Clinical and Histological Study of Menstruation," Dr. P. C. Schreier, Memphis.

"Bronchial Asthma," Dr. W. C. Chaney, Memphis.

"Obesity and Malnutrition," Dr. H. B. Gotten, Memphis.

"Diagnosis and Operability of Cancer of the Stomach," Dr. R. L. Sanders, Memphis.

"Repairs of New and Old Lacerations Following Childbirth," Dr. W. T. Pride, Memphis.

"Caesarean Section—Indications, Contraindications and Technic," Dr. Lucius E. Burch, Nashville.

"Pneumonia, with Special Reference to Typing and Specific Therapy," Dr. W. R. Cate, Nashville.

"The Present Status of Surgery of the Autonomic Nervous System," Dr. T. D. McKinney, Nashville.

"General Paresis — with Report of a Case," Dr. K. S. Howlett, Franklin.

"Some Details in Caring for the Prostatic Patient and the Presentation of a New

Catheter," Dr. J. C. Pennington and Dr. E. C. Lowery, Nashville.

"Adenoma of the Parathyroid Gland, with Hyperparathyroidism and Renal Calculus," Dr. S. S. Riven, Nashville.

"Edema," Dr. John B. Youmans, Nashville.

"The Importance of Examining Familial Contacts of Tuberculous Individuals," Dr. R. S. Gass, Nashville.

"The State Health Program," Dr. W. C. Williams, Nashville.

"The Chemistry of Barbituric Acid and Its Derivatives," Dr. W. E. Boyce, Flatwoods.

PROGRAM, TENNESSEE STATE PEDIATRIC
ASSOCIATION, GAYOSO HOTEL,
MEMPHIS, TENNESSEE

April 14, 1936

President, Dr. Joe T. Smith, Knoxville.
Vice-President, Dr. Wm. E. Van Order,
Chattanooga.

Secretary-Treasurer, Dr. Kinsey M. Buck,
Memphis.

Executive Committee

Dr. Owen Wilson, Chairman, Nashville.
Dr. Walker Lee Rucks, Memphis.
Dr. Cassius W. Friberg, Johnson City.

9:30 A.M.

Introductory remarks by the President,
Dr. Joe T. Smith, Knoxville.

9:45 A.M.

Clinical session by the Pediatric Staff of
the University of Tennessee.

Case Reports and Case Presentations.
Twelve members of the Pediatric Staff will
participate in the Conference.

(Speakers limited to ten minutes.)

12:30 P.M.

Luncheon, given by the Memphis Pediatric
Society.

Round table discussion led by Dr. Hugh
McCulloch, St. Louis. (All questions must
be in writing.)

2:00 P.M.

"Enuresis," Dr. Wm. E. Van Order,
Chattanooga.

To discuss: Dr. Hearn Bradley, Nashville;
Dr. A. K. Turner, Bristol.

2:30 P.M.

Guest Speaker, Dr. Hugh McCulloch, St.
Louis, Mo. Subject to be announced. (No
discussion.)

3:30 P.M.

"Poliomyelitis," Dr. W. L. Poole, Johnson
City.

To discuss: Dr. Eugene Rosamond, Memphis;
Dr. Horton Casparis, Nashville.

4:00 P.M.

"Nephritis in Children," by Dr. Jack
Chesney, Knoxville.

To discuss: Dr. Owen Wilson, Nashville;
Dr. J. R. Gott, Murfreesboro.

4:30 P.M.

Short business meeting. Election of officers.

5:00 P.M.

Reception at the University Club. Tendered
by Dr. W. L. Rucks, Memphis, in honor of
Dr. Hugh McCulloch, St. Louis, Mo. All members
of the Tennessee State Pediatric Association are
invited.

Papers limited to twenty minutes (except
guest speakers). Discussion limited to five
minutes.

All members of the Tennessee State
Medical Association are welcome at these
meetings and may have the courtesy of
the floor.

Information

The Tennessee State Pediatric Association
was organized in Knoxville, April 15,
1931.

It is a section of the Tennessee Medical
Association. Its membership is open to
members in good standing of the Tennessee
Medical Association who practice pediatrics
or those who are especially interested
in diseases of children.

A one-day meeting is held on the first day
of the Tennessee Medical Association meeting.
This is once a year, on the second
Tuesday in April, in the city where the
Tennessee Medical Association meets.

The dues are \$2.00 a year.

Its object is to promote pediatric study
and practice, and good fellowship among
the pediatricians of Tennessee.

Visiting pediatricians from other states
are cordially invited.

LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. John B. Steele, Chattanooga.
 Vice President for East Tennessee—Dr. C. R. Thomas, Chattanooga.
 Vice President for Middle Tennessee—Dr. J. W. Wilkes, Columbia.
 Vice President for West Tennessee—Dr. N. S. Walker, Dyersburg.
 Secretary-Editor—Dr. H. H. Shoulders.
 Assistant Secretary-Editor—Dr. W. M. Hardy.

TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.
 Dr. Franklin B. Bogart, Medical Arts Building, Chattanooga.
 Dr. W. L. Williamson, 915 Madison Avenue, Memphis.
 Dr. J. O. Manier, Doctors Building, Nashville.
 Dr. E. R. Zemp, Walnut Street, Knoxville.

COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.
 Second District—Dr. S. R. Miller, Knoxville.

Third District—Dr. J. H. Revington, Chattanooga.
 Fourth District—Dr. J. T. Moore, Algood.
 Fifth District—Dr. John W. Sutton, Petersburg.
 Sixth District—Dr. L. W. Edwards, Nashville.
 Seventh District—Dr. C. D. Walton, Mt. Pleasant.
 Eighth District—Dr. J. R. Thompson, Jackson.
 Ninth District—Dr. E. H. Baird, Dyersburg.
 Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—
 Dr. E. G. Wood, Knoxville; East Tennessee.
 Dr. H. H. Shoulders, Nashville; Middle Tennessee.
 Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—

Dr. E. T. Newell, Chattanooga; East Tennessee.
 Dr. J. O. Manier, Nashville; Middle Tennessee.
 Dr. E. C. Ellett, Memphis; West Tennessee.

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COUNTY	PRESIDENT	VICE PRESIDENT	SECRETARY-TREASURER
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Hamilton	D. M. Williams, Chattanooga	J. F. Campbell, Morristown	J. F. Campbell, Morristown
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The Woman's Auxiliary to the Memphis and Shelby County Medical Society extends a most cordial invitation to auxiliary members throughout the state to attend our annual meeting there in April. Mrs. W. S. Lawrence, president of the hostess auxiliary, reminds us "that the local members are looking forward with very great pleasure to the meeting, and are very anxious to have a large attendance, hoping and believing the occasion will be a most happy one."

PROGRAM

Annual Meeting Woman's Auxiliary
to the
Tennessee State Medical Association
Memphis, April 14-16
Headquarters, Hotel Gayosa

Tuesday, April 14

9:30 A. M.—Registration.

2:30 P.M.—Preconvention board meeting. Mrs. R. G. Reaves, presiding. Assembly room, Hotel Gayosa.

7:00 P.M.—Executive board dinner. Memphis and Shelby County Auxiliary, hostess. Home of Mrs. W. C. Campbell.

8:30 P.M.—Auxiliary reception.

Wednesday, April 15

9:00 A.M.—Regular annual meeting.

1:00 P.M.—Luncheon, Mrs. R. G. Reaves, presiding. Card party. Nineteenth Century Club.

3:30 P.M.—Executive committee. Gold room, Nineteenth Century Club. Mrs. Theodore Morford, president, presiding.

7:00 P.M.—Annual banquet at Peabody Hotel.

Thursday, April 16

9:00 A.M.—Post-convention board meet-

ing. Mrs. Theodore Morford, president, presiding.

Mrs. Willis C. Campbell is chairman of convention committee.

The eighth anniversary of the founding of the Woman's Auxiliary to the Nashville Academy of Medicine and Davidson County Medical Society was observed Friday evening, February 7. In celebration of the occasion the membership, with their husbands as guests, entertained at dinner at the University Club. Dr. Paul DeWitt served as toastmaster. Dr. DeWitt introduced Mrs. R. G. Reaves of Knoxville, president of the Woman's Auxiliary to the State Medical Association, who was the guest of honor. Mrs. T. G. Pollard and Mrs. W. C. Bilbro, Jr., were chairmen of the event; Mrs. Fowler Hollabaugh, chairman of music; Mrs. J. D. Lester, chairman for favors; and Mrs. W. F. Fessey, chairman of decorations.

Mrs. Pollard was hostess at luncheon at Belle Meade Country Club on Saturday, complimenting Mrs. Reaves. Other guests included members of the State Board in Middle Tennessee.

The Woman's Auxiliary to Stones River Academy of Medicine, at the February meeting, with their president, Mrs. Matt Murphree, perfected plans for a luncheon to be given on March 20 at the home of Mrs. J. H. Scott. The guest of honor on this occasion will be Mrs. Rogers Herbert of Nashville, president of the national organization of the State Board in Middle Tennessee.

MEDICAL SOCIETIES

Campbell County:

The Campbell County Medical Society held its regular meeting in the Glanmorgan Hotel in Jellico on February 27. An interesting paper was read by Dr. R. W. Lewis on "Measles." All members enjoyed the discussion of Drs. S. S. Brown and H. Stirl Rule. Two new members were admitted into the society, Dr. Harry Hollingsworth

of Anthras and Dr. H. Stirl Rule of Jacksboro.

Those present were Drs. S. S. Brown, R. W. Lewis, C. E. Ausmus, Harry Hollingsworth, A. B. Lawson, H. Stirl Rule, and R. J. Buckman.

The next meeting will be held at the Peoples Bank in LaFollette on March 26.

Carroll, Henry, and Weakley County:

The February meeting had the following program: "Cancer of the Breast," by Dr. J. W. McClaran, Jackson. "Immunization," by Dr. W. B. Mims, Memphis. "Maternal Welfare," by Dr. James Reinberger, Memphis.

Davidson County:

February 21—"Tropical Medicine in the Belgian Congo," by Dr. E. R. Kellersberger. Dr. Kellersberger has spent a number of years in the Belgian Congo and presented moving pictures of the various stages of patients affected with "Sleeping Sickness."

February 25—"Lobar Pneumonia in Children," by Dr. O. H. Wilson. Discussion opened by Dr. T. Fort Bridges.

March 3—Case Reports. "Operative Relief of Enlarged Heart," by Dr. W. W. Hubbard. Discussion opened by Dr. W. C. Dixon.

"Chronic Empyema," by Dr. H. H. Shoulders. Discussion opened by Dr. A. T. Sikes.

"Imperforate Hymen," by Dr. D. W. Smith. Discussion opened by Dr. H. M. Tigert.

March 10 — "Tennessee's State Health Program," by Dr. W. C. Williams. Discussion opened by Drs. J. M. Lee and J. O. Manier.

Dyer, Lake, and Crockett County:

On February 5, Dr. John E. Frazier of Newbern made a case report. Dr. J. W. Bodley of Memphis spoke on "Empyema in Children." Dr. O. S. Warr of Memphis gave a paper on "Diagnosis and Management of Acute Circulatory Failure."

The Dyer, Lake, and Crockett County

Medical Society met in regular monthly session March 4. Scientific program:

"Cancer of the Breast," Dr. C. G. Andrews, Memphis.

"Cancer of the Stomach," Dr. R. L. Sanders, Memphis.

"Cancer of the Rectum," Dr. J. L. McGehee, Memphis.

Discussions were opened by Drs. W. P. Watson, J. G. Price, and J. Paul Baird, all of Dyersburg.

This symposium on cancer was entertaining as well as most instructive.

C. L. DENTON, *Secretary*.

Gibson County:

On February 10 Drs. G. H. Berryhill and C. F. Webb, both of Jackson, addressed the society.

Hamilton County:

March 19—"Certain Endocrine Dyscrasias and Case Reports," by Dr. H. D. Hickey. "Enuresis," by Dr. W. E. Van Order.

March 26—"The Management of Normal Labor," by Dr. W. B. Bogart. "The Architecture of the Female Pelvis: A Roentgenologic Study," by Dr. R. P. Ball.

April 2—"Ocular Tuberculosis," by Dr. Willard Steele. "The Doctor," by Dr. J. H. Barnett.

Hardin, Lawrence, Lewis, Perry, and Wayne County:

February 25—Invocation by Rev. Charles Parker, Waynesboro. "A General Consideration of Diseases of the Thyroid," by Dr. N. S. Shofner, Nashville. Discussion opened by Dr. Leo Harris, Lawrenceburg.

This was an exceptionally good meeting. The one paper was interesting and appreciated by all members present.

Knox County:

February 11—Dr. Edgar L. Grubbs, "The Use of Perioral Endoscopy in Diagnosis and Treatment." Discussion by Drs. Potter, Hamilton, and Cunningham.

February 18—Dr. Tom Barry, "Traumatic Urology." Discussion by Drs. S. R. Miller and R. G. Waterhouse.

February 25—Dr. R. B. Wood, "Meningitis," Dr. Carmichael opened the discussion.

March 3—Dr. A. H. Lancaster, "Congenital Syphilis." Discussion opened by Drs. Williamson, Dorsey, and Cross.

Madison County:

At the February meeting, Dr. James Miller spoke on "Minor Surgery in Infections of the Hand."

Dr. Morris Fishbein, editor of the *Journal of the American Medical Association*, spoke twice in Jackson on February 26—once before the Rotary Club and once before the Medical Society.

Shelby County:

The society met March 3.

"Case Reports: Fracture of Humerus with Unusual Complications," Dr. A. R. McMahan.

Report of a case, Dr. L. F. Pierotti.

Papers: "Use of Antigen in Treatment of Neisserian Infections," Dr. C. E. James. Discussed by Drs. J. A. James and H. K. Turley.

"Conditions in the Newborn," by Dr. A. G. Quinn. Discussed by Dr. Beulah Kittrell and Dr. W. D. Mims.

Washington County:

March 5—"Diseases of the Stomach," by Dr. C. W. Brabson. Discussion by Drs. Preas and Willis.

"Sympathectomy in the Treatment of Thromboangiitis Obliterans," by Dr. P. E. Parker. Discussion by Drs. Brading and Gibson.

OTHER MEDICAL SOCIETIES

THIRD INTERNATIONAL CONGRESS ON MALARIA

The Third International Congress on Malaria will be held in Madrid, Spain, October 12-18, 1936, under the presidency of Dr. Gustavo Pittaluga, director of the Institute of Public Health of Spain. The con-

gress will consist of scientific meetings with papers by authorities on malaria from all parts of the world. Various itineraries have been planned in order to allow those attending the congress to visit the most typical and beautiful towns of Spain, traveling in comfort and at moderate prices. Any one wishing to attend the congress or to present a paper can secure further information from the undersigned.

HENRY E. MELENEY, M.D.,
Vanderbilt University School of Medicine,
Nashville, Tennessee.

VANDERBILT UNIVERSITY MEDICAL SOCIETY

February 7, 1936

A Symposium on the Pathogenesis of Uremia

1. "Disturbances in the Electrolyte Pattern of the Blood and of the Cerebrospinal Fluid in Relation to Uremia,"
 Dr. M. F. Mason.

Increased neuromuscular irritability in dogs with experimental anuria and in patients with renal insufficiency is found to parallel the diminution of ionized calcium in the cerebrospinal fluid rather than that in the serum. Retention of the phenolic substances inhibits the effects of diminished calcium ion concentration. Consequently, increased neuromuscular irritability may be absent, although the calcium ion concentration of the fluids bathing the central nervous system is low. In uremia, the degree of exhibition of irritative phenomena is influenced by the intensity of two opposite factors: calcium ion deficit augmenting neuromuscular irritability and retention of phenolic substances inhibiting it.

2. "The Localization in the Nervous System of Some of the Effects Produced by the Intracisternal Administration of Electrolytes," Dr. Cobb Pilcher.

From the list of electrolytes which we had previously found to produce a rise in blood pressure when injected intracisternally potassium chloride was chosen for these experiments. Through a ureteral catheter, 0.2 cc. of a 1/10 molar solution injected onto the floor of the exposed fourth ven-

tricles of dogs produced a constant rise in blood pressure. After section of the brain stems at the intercollicular level, the effects were unaltered. This is offered as evidence of the probable existence of a vasomotor center in the floor of the fourth ventricle.

3. "Guanidine-like Substances in Relation to Uremia," Dr. Ann Minot.

Guanidine causes an intoxication characterized by hyperirritability of the nervous system, irritation of the gastrointestinal tract, a temporary rise and subsequent fall in blood pressure, and hypoglycemia. These effects can be controlled by calcium therapy. Using a calorimetric method and avoiding or correcting as completely as possible for known interfering substances in uremic blood, we have found an increase in substances which give the color test for guanidine in many uremic bloods. It seems possible that certain features of the clinical picture of uremia may at times be due to guanidine derivatives. Final identification and evaluation of the substances detected must await a more specific chemical method.

4. "The Mechanism of Some of the Symptoms of Uremia," Drs. T. R. Harrison, Harry Resnik, and John Rainey.

It appears that the increased neuromuscular irritability associated with the uremic state is the resultant of several factors. Diminution of ionized calcium in the fluid bathing the central nervous system and retention of guanidine-like substances tend to augment the irritative phenomena, while accumulation of phenolic derivatives tends to produce depression. Many other factors are concerned, such as increased ammonia formation in the gastrointestinal tract, dehydration and acidosis, the failure of the normal detoxifying mechanisms in the liver as nitrogen retention increases, terminal failure of carbohydrate metabolism, and increased destruction of body protein. Substances toxic to the amphibian heart are found in uremic serum in contrast to normal serum and may also be important.

Papers discussed by Drs. Morgan and Youmans.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Clinical Use of Cyclopropane and Tribromethanol in Amylene Hydrate. Paul M. Wood. *Journal A. M. A.*, January 25, 1936.

Cyclopropane may be administered with any form of apparatus, but by any method other than the carbon dioxide absorption technic is so wasteful as to be prohibitive. The author mentions 720 administrations by this method. Five hundred fifty of these cases were preceded by a basal narcosis of tribromethanol with morphine sulphate gr. 1/6 and atropine sulphate 1/150. In 350 of these cases a small amount of ether was added to secure a greater degree of relaxation. Three important factors must be considered to insure a satisfactory anesthesia with this combination. They are careful selection of the patient, adequate apparatus, and accurate timing of anesthetic procedures.

The disadvantages enumerated were that more time is consumed in preparation, cyclopropane is inflammable, its marked potency increases danger of technical errors, prohibitive cost when not given by the proper technic, combined cyclopropane and tribromethanol is contraindicated when there is marked disease of the rectum, kidneys, and liver. In these cases the tribromethanol should be omitted.

The advantages are wide margin of safety between therapeutic and toxic dose, oxygen per cent is always high, giving a wide range of depth of anesthesia without anoxemia, muscular relaxation is greater than in other gaseous anesthetics, the uterus has shown marked contraction after Cesarean section according to some observers, but in these cases tribromethanol was omitted, decrease in operative and postoperative morbidity, and lastly it is of great psychic advantage to the patient.

DERMATOLOGY

By E. E. BROWN, M.D.
Doctors Building, Nashville

Dermatophytosis: Its Treatment with Trichophytin. Eugene F. Traub, M.D., and Jesse A. Tolmach, M.D. New York, N. Y., *Archives of Dermatology and Syphilology*, September, 1935.

The authors submitted results obtained in the cases of 135 patients with dermatophytosis who were given intradermal injections of trichophytin. The cases were divided into two groups, viz.: (1) those in which the diagnosis was confirmed by microscopic examination or culture; (2) those which were not confirmed. All cases were clinically dermatophytosis. In sixty-two cases they used a commercial trichophytin, in thirty-six cases a

trichophytin prepared by Stuyvesant Square Hospital, and in thirty-seven cases a combination of the two. They had apparent cures in fourteen cases. Some of these cases had early recurrences, and some of the so-called cured were questionable. Variable degrees of improvement were noted in fifty-eight cases. In sixty-three cases the patients showed no change or became worse. The results were essentially the same in those cases that were proved by microscopic examination and culture and those that were not.

The paper was ably discussed by Stokes, Osborne, Wile, Wise, C. M. Williams, and Zwick.

It seemed to be the consensus of opinion that trichophytin had little, if any, effect on dermatophytosis.

NOTE: I thoroughly agree with this opinion. Better results by far are obtained by local applications and X-ray therapy.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 316 Doctors Building, Nashville

The Effect of Various Analgesics on the Newborn. Milton Smith Lewis, Nashville, Tennessee. *Southern Medical Journal*, 29: 2, 178-184, February, 1936.

The author shows by a review of the recent literature that there is a controversy over the subject of narcosis of the newborn. This is a study of 515 infants, the mothers of whom had received analgesics during labor, the author evaluating the results in each of the following four groups:

Group 1 includes all cases that received morphine and scopolamine.

Group 2 includes all cases that received morphine, scopolamine, and sodium amytal.

Group 3 includes all cases that received sodium amytal only.

Group 4 includes all cases that received no analgesic, but to whom nitrous-oxide-oxygen anesthesia was given for completion of the second stage of labor.

There was a group of fifteen stillborn babies, but none of these were lost as a result of narcosis.

A detail description of the four groups is given and a chart demonstrates the incidence of narcosis in each group. The total incidence of narcosis in the entire series was 11.4 per cent.

Traumatism of labor is the important factor, for twenty-four per cent of the operative group were narcotized. Therefore, where operative procedures are anticipated, analgesics should be used sparingly.

The size of the dose of the analgesic and the time between administration and the delivery of the infant does not seem to have any bearing on the incidence of narcosis.

The effect of the drug shown on the mother is no indication of the effect on the newborn.

Vaginal Hysterectomy: Its Indications, Technic, and End Results. Curtis H. Tyrone, New Orleans. New Orleans Medical and Surgical Journal, 88: 8, 490-493, February, 1936.

A survey of a consecutive series of vaginal hysterectomies, performed in the gynecological services of Dr. C. Jeff Miller at Charity Hospital and Touro Infirmary from January, 1932, until the present time, is presented.

Indications have gradually extended until, at the present, the vaginal approach is used in half of the cases in which hysterectomy is necessary. The statement that the end results have justified this choice of operation is based on careful follow-up by repeated examinations and personal communication with 175 of 240 cases.

The advantages of vaginal hysterectomy are:

1. Lowered mortality and morbidity rate. In this series of cases there was a mortality of 1.2 per cent. The average number of postoperative days in the hospital was twelve.
2. Less shock to the patient.
3. Minimum risk of infection (peritonitis), as the operation is largely extraperitoneal, thus also reducing adhesions and intestinal obstruction.
4. No painful abdominal scar.
5. Rapidity of operation (average duration of operation thirty-eight minutes, including perineorrhaphy).
6. Correction of obstetrical injuries by combining hysterectomy with repair of cystocele and lacerated perineum.

The indications for the operation are:

1. Prolapse of the uterus. There were sixty-five cases of complete procidentia in which choice of operation was undebatable. The author believes vaginal extirpation with repair of cystocele and rectocele the most effective treatment and far superior to the old abdominal fixation operations which have no place in modern gynecological surgery.

2. Fibroids of the uterus when causing symptoms and associated with a diseased cervix.

3. Fibrosis of the uterus with extensive cervical disease.

4. Postmenopausal bleeding.

The author further suggests malignancy of the uterine body and early cases of carcinoma of the cervix when associated with prolapse.

One hundred seventy-five cases of the two hundred forty were followed, and one hundred seventy or 96.5 per cent showed complete relief.

The technic of the operation is given.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

Closure of the Angle of the Anterior Chamber in Glaucoma. Troncoso Uribe. American Journal of Ophthalmology, February, 1936.

With the gonioscope the author has observed the

angle of the anterior chamber during different stages of glaucoma. He reports in three series on eighty-seven glaucomatous eyes. Study of twenty-six eyes with primary congestive glaucoma, thirty-four eyes with simple glaucoma, and six eyes with simple glaucoma with subacute exacerbations leads him to conclude that at the beginning of an attack the angle is open, but if the attack persists or relapses occur the angle may become closed. In simple glaucoma the angle was usually open, proving that peripheral synechiae are the result and not the cause of hypertension. The extent and depth of peripheral synechiae had no correspondence with size and shape of the pupil or the height of the ocular tension. The action of the iridectomy was studied. In four cases of simple glaucoma the angle was entirely open and remained open after iridectomy lowered the tension. In many cases iridectomy lowered tension and improved vision even when the angle remained totally closed. The author believes the iridectomy works (1) by providing a large aperture between the chambers, thus equalizing pressure and allowing better circulation of liquids; (2) in some cases by freeing peripheral synechiae, thereby reopening normal outlets; (3) by relieving pressure on the veins of the iris and ciliary processes, thus permitting larger absorption of aqueous. He feels that fistulizing operations should be confined to cases in which the angle is entirely closed or in which iridectomy has failed. Ten cases of simple glaucoma with open angle were studied before and after iridectomy. The angle was found entirely closed after the operation in six cases, and in two others the synechiae progressed from partial to corneal.

PEDIATRICS

By JOHN M. LEE, M.D.
Doctors Building, Nashville

Acute Lymphocytic Meningitis. John A. Toomey, M.D., Cleveland, Ohio. The Journal of Pediatrics, February, 1936.

In an orphanage in Cleveland housing 360 male children and sixty-five adults, seventy children and five adults became sick in a period of twenty-one days with a similar illness. They had excruciating headache; anorexia with nausea or vomiting or both; pain in the epigastrium on palpation; a low grade fever; a throat moderately or severely inflamed; some pain on movement of the head; a total white count perhaps lower than usual, but if normal, in most cases, with a relative increase in the circulatory lymphocytes; negative neurological signs; a spinal fluid pleocytosis with lymphocytes predominating in the severe cases; and a hemolytic streptococcus in the throats of a small percentage of the cases.

Thirty other similar cases were observed in widely separated portions of Cleveland. All cases recovered in a few days with no complications or sequelae. Treatment consisted of rest in bed, a

cathartic, liquid diet, codeine or lumbar puncture for pain.

The author feels that this syndrome is a new one to which he has given the title of his paper for a name. Acute encephalitis and abortive poliomyelitis are ruled out by the lack of neurological signs and weakness or paralysis. There is lacking the glandular enlargement of infectious mononucleosis, and the latter disease does not produce the headache of this syndrome. Acute aseptic meningitis does not give the peculiar blood picture of the author's cases, though they may be unusually severe cases of that disease.

SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.
1400 Monroe Avenue, Memphis

Life Expectancy in Biliary-Intestinal Anastomosis. E. L. Eleason, M.D., and Julian Johnson, M.D. *Surgery, Gynecology, and Obstetrics*, January, 1936.

When an obstruction of the common duct cannot be removed with reasonable safety to the patient, a cholecystogastrostomy or cholecystoduodenostomy offers an escape from a difficult situation if the gall bladder is present and the cystic duct open.

Experimentally, biliary-intestinal anastomosis in dogs results in ascending liver infection and cholangitis, there being less liver infection in cholecystogastrostomy. Some authors report no resulting ascending liver infection from biliary-intestinal anastomosis.

The anastomosis is by choice made in the stomach or duodenum rather than in the lower intestinal tract because of less danger of ascending biliary infection. Most surgeons prefer the gall bladder to prevent further stone formation and do a choledochoduodenostomy. Many methods of anastomosis have been suggested, such as lateral anastomosis, a button, or a rubber or metal tube. Tubes sometimes become obstructed with deposits of bile salts. Indirect anastomosis, transplanting a fistulous tract, has been used successfully in a few cases.

The average surgeon has done a biliary-intestinal anastomosis only when he has been forced into it. Cholecystogastrostomy has been performed for peptic ulcer by Sippy, who pointed out that seven to nine times the normal output of bile would be required to neutralize the gastric juice. The usual indication for this type of operation is common duct obstruction from carcinoma of the pancreas or bile ducts, chronic pancreatitis, stricture or traumatic injury of the ducts or a stone in the common duct that cannot be removed. Steel recommends cholecystogastrostomy as a routine procedure in gall bladder disease in preference to cholecystectomy.

Clinical Results.—Babcock and others report favorably on the use of cholecystogastrostomy for peptic ulcer. Nazarov reoperated upon three of

his patients when symptoms returned and found the anastomosis closed. Steel reoperated upon four cases in which cholecystogastrostomy had previously been done and found the anastomosis open in all four cases.

When the common duct obstruction is due to malignancy the surgeon feels justified in performing the operation as a palliative measure. However, when the obstruction is nonmalignant he is unwilling to subject the patient to the danger of ascending biliary infection, which Graham, Cole, Copher, and Moore assert is an almost inevitable consequence. On the other hand, Babcock and Dubose state that they never have seen cholangitis following cholecystenterostomy.

Of the author's ten cases four died in the hospital, two died from cholangitis one year after operation, two were well six and three months after operation, one was not traced, and one was well eight years after operation. They conclude that the usefulness of biliary-intestinal anastomosis cannot be properly evaluated at the present time, but it has a definite place in surgery in cases of common duct obstruction. They believe also that ascending liver infection is a frequent enough complication of the operation to prevent its indiscriminate use.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.
By G. A. WILLIAMSON, JR., M.D.
Medical Building, Knoxville

Oral Administration of Potassium Bismuth Tartrate in Treatment of Syphilis. J. A. Kolmer. *Archives of Dermatology and Syphilology*. September, 1935.

The therapeutic possibilities of bismuth preparations by oral administration in the treatment of syphilis have not received the attention they deserve. Kolmer does not advise or practice the treatment of syphilis by the oral administration of either mercury or bismuth, because he believes that modern methods of intravenous and intramuscular medication are much more effective; yet he holds, under certain conditions, that there is a definite place for oral medication, and the purpose of this communication is to show the value of ingestion of water-soluble potassium bismuth tartrate in comparison with the mercurial compounds that are commonly employed.

In ten years of experience with bismuth by oral administration Kolmer has found this drug less toxic than mercury and distinctly curative. The author has formulated the following indications for the oral administration of potassium bismuth tartrate: (1) As a form of follow-up or "consolidation" treatment of acquired or congenital syphilis over a period of six to eight weeks following courses of arsphenamine or a bismuth preparation, or during the rest periods; (2) as a means of starting the treatment of some chronic syphilitic patients, especially when cardiovascular disease is present and it is necessary or advisable to initiate

treatment gradually before injections are started; (3) for the "combination" treatment of syphilis when it is desired to give bismuth along with intravenous injections of arsphenamine or neoarsphenamine; (4) occasionally for the treatment of those syphilitic patients who find it impossible to take mercury by inunction or injection.

Adults tolerate doses of from three to six grains of water-soluble potassium bismuth tartrate three times a day much better than corrosive mercuric chloride, red mercuric iodide or yellow mercurous iodide in the usual doses. The same has been found true of children who received smaller amounts according to body weight. The incidence of gastrointestinal disturbances, including stomatitis and gingivitis, is much lower. In fact, these complications were practically never observed in the bismuth series.

On the basis of his animal experiments, the author states that water-soluble potassium bismuth tartrate is much less toxic for rats and rabbits when administered orally than mercuric chloride, succinimide, or benzoate. The same is true when intramuscular injections are given.

The author's clinical experience has led him to believe that the oral administration of potassium bismuth tartrate has aided in producing marked serologic improvement in many instances. He quotes Brigham who found that this drug orally was of value in the treatment of Wassermann-fast cases, and in those patients intolerant of arsenic, or as an adjunct to arsenical therapy.

Kolmer has never been able to sterilize completely syphilitic rabbits with as many as twenty-four daily doses of mercuric chloride by stomach tube in amounts of 0.001 gm. per kilogram of weight. However, twenty-four daily doses of 0.02 gm. per kilogram of water-soluble potassium bismuth tartrate almost invariably resulted not only in the disappearance of spirochetes and completely healing of testicular lesions in from four to six weeks, but also in complete sterilization of the inguinal lymphatic glands.

The author does not provide any protocols of his experimental work in this publication.

In adults he usually administers water-soluble potassium bismuth tartrate—D. R. L.—in capsules

of from two to three grains three times a day after meals. A formula for a stable and almost tasteless solution of the compound is also given in this article.

BOOK REVIEW

Failure of the Circulation. Tinsley R. Harrison. The Williams and Wilkins Company, Baltimore, 1935. 396 pages.

Of the many textbooks dealing with heart disease, each is likely to reflect the special interests and pet theories of its author. In one, electrocardiography may be held up as the *sine qua non* of cartiologic diagnosis, another may deal almost exclusively with post-mortem findings. Further, most of them are likely to neglect the circulatory and cardiac disorders not associated with disease in the heart itself.

Better than any book hitherto published, "Failure of the Circulation," by T. R. Harrison, associate professor of medicine at the Vanderbilt University School of Medicine, avoids these shortcomings. It is a treatise dealing with its field in a concise, understandable diction which will render it of value to anyone interested in the diagnosis, prognosis or treatment of circulatory failure. The author's researches upon which much of the recent knowledge rests is dealt with no less fully and readably than the clinical aspects of the diagnosis and therapy.

The general subject of circulatory disease is logically divided into three broad types: first, the "hypokinetic" syndrome associated with shock, hemorrhage, injury to the nervous system and similar acute circulatory disorders; secondly, the "hyperkinetic" type, dealing with the overactive heart of hyperthyroidism, anemia, arteriovenous fistula, cardiac neurosis, and kindred disturbances; and thirdly, the "dyskinetic" syndrome, produced by disease of the heart itself, with its variegated causes, mechanisms, and manifestations.

The book has a comprehensive bibliography which will be of great value to the reader who wishes to pursue the subject further.—C. P.

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SYMPATHECTOMY IN THE TREATMENT OF THROMBOANGITIS OBLITERANS*

P. E. PARKER, M.D., Johnson City

I AM, MORE OR LESS, reliably informed that at the meeting of the American Medical Association last year a famous doctor said that sympathetic ganglionectomy might relieve pain in the legs, but so would decapitation relieve the headache. Surgery, as well as other branches of medicine, continues to progress. Today, operations are being done and results produced that would have been unbelievable a year or so ago; such as grafting the pectoral muscle to the heart muscle to establish collateral circulation in coronary occlusions, an operation that has now been successfully performed on man with remarkable results.

I first became interested in sympathetic ganglionectomy in the treatment of thromboangitis obliterans, or Buerger's disease, when, two years ago, through the courtesy of Dr. Crutchfield at the Haggard Clinic in Nashville, I was shown a case of Buerger's disease on which unilateral ganglionectomy had been done. This was a beautiful demonstration of results. The beneficial result being very marked on the operated side with the other foot showing signs of getting worse.

While it is the purpose of this paper to deal with sympathetic ganglionectomy in the treatment of thromboangitis obliterans,

let us first consider briefly the etiology, clinical course, and treatment.

Thromboangitis obliterans has been given over twenty-five different names. Buerger, in 1908, suggested the name thromboangitis obliterans.

Etiology.—The etiology is still in doubt. Abnormalities of the blood, blood vessels, sympathetic nervous system, and glands of internal secretion have each been cited as playing a part in causation. Langley¹ and his pupils showed that nicotine, in doses larger than that received by smokers, produced vasoconstriction, but this disease has been shown in nonsmokers. It has a predilection for males and Jews. In 300 personal observations, Diez² has never seen an instance of thromboangitis obliterans in a nonsmoker or in a woman. It usually develops before, rather than after, mid-life.

Clinical Course.—Usually the first and most common complaint is of intermittent claudication—pain or excessive fatigue on exercise. This is probably best described as a cramping sensation and manifests itself in the muscles of the calf, under the knee, in the ankle, or arch of the foot. There are few conditions which produce pain which is so demoralizing. The Mayo Clinic³ reports one patient who had purchased thirty pairs of especially constructed shoes and none had given relief. Another had purchased successively thirty pairs of arch supporters, another nineteen.

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Accompanying, or following, intermittent claudication there develop certain changes in the color of the limb, which becomes pale when it is elevated above the level of the heart and a reddish cyanotic tinge when it is depressed. At this stage, pain frequently occurs, even at rest, and is usually localized in the digits.

In a smaller group of patients, the first symptoms are those of a sudden occlusion of a peripheral artery. This is usually indicated by severe pain in the foot, marked pallor, and coldness. The pain may subside within a few days and the pallor give way to rubor and cyanosis, with the subsequent development of the more typical syndrome of intermittent claudication. Quite characteristic too is the occurrence of a superficial phlebitis. This differs from other types of thrombophlebitis chiefly in its tendency to recur, which may happen for years before other evidences of the disease, such as claudication or arterial occlusion, become manifest.

As the disease progresses, other manifestations of impaired peripheral circulation become apparent. One of the most common is edema. Various trophic changes occur in the nails and soft parts, the former become ridged and split, and fissures and ulcers appear in the skin.

According to Telford³ and Stopford,³ on observation of some two hundred cases, the second leg to be attacked shows the disease in a worse degree.

Treatment.—Telford and Stopford³ say, "All forms of physiotherapeusis are, at best, merely temporary palliatives, and unless handled with care may be actually dangerous." At the present time, there is on the market an apparatus for giving positive and negative pressure alternately. Such an apparatus was on exhibition at the meeting of the Mid-South Medical Assembly in Memphis, but I am unable to get any data on results in the use of this treatment. Brown, Allen, and Mahorner² say, "Medical treatment in cases with trophic changes entails prolonged disability and should be recommended only after full consideration of the economic status of the patient and his willingness to accept the possibility of ultimate failure."

All authorities seem agreed that tobacco should be discontinued. The treatment by nonspecific protein and five per cent sodium chloride intravenously gives splendid results in some cases.

Periarterial sympathectomy has been done, but all authorities seem agreed that it is of no benefit. Allen⁴ says, "The results indicate that any benefit is either so slight or so transient that the operation is hardly worth while." Section of the posterior tibial, anterior tibial, and musculocutaneous nerve is sometimes done for the relief of the pain.

The rationale of operations on the sympathetic system is briefly that, in addition to the occlusive process in the blood vessels, there is a superimposed vasospasm which can be abolished by a ganglionectomy.

It is not the purpose of this paper to go into details describing the operation, as a detailed technical knowledge of the sympathetic nervous system within the abdomen and lumbar region is required, as well as the most complete desympathetization possible. The operation is technically difficult, and it should be emphasized that the recognition of the sympathetic fibers and trunks are not always a simple matter. Some operative² failures reported have probably been due to the removal of the lymphatic trunks, which closely resemble the sympathetic trunks. It is very important that the proper ganglia—namely, the second, third, and fourth lumbar—and all ramifications attached thereto be extirpated.

Diez⁵ of Buenos Aires was the first to perform ganglionectomy in the treatment of thromboangitis obliterans. He reports the freedom from recurrence after the ganglionectomy in ninety-two patients, forty-two of whom have been observed for more than two years. Diez also makes the statement that, when all patients have a ganglionectomy performed early in the disease, mutilating amputations will no longer be necessary. Diez's enthusiasm for ganglionectomy as the choice of treatment in all patients for thromboangitis obliterans is not reflected in this country, where the tendency has been to limit its use to particularly favorable cases. According to Scott and Martin,⁶ "the procedure that permanently overcomes the detrimental effect

of sympathetic vasoconstriction in arterial disease is sympathetic ganglionectomy."

"Between April, 1931, and April, 1934, Telford and Stopford³ performed the operation of lumbar cord ganglionectomy (excision of the second, third, and fourth lumbar ganglia with the intervening chain) in forty-eight cases of thromboangitis obliterans. "In forty-two of these the excision was bilateral, and in six a unilateral operation was done, the patients having already suffered amputation of one leg. Convalescence in all cases was straightforward, and there was no death in the series.

"The present condition of these cases has been recently reviewed. Since operation, six of the patients have died. The causes of death are: one each hematemesis from a duodenal ulcer; alcoholic delirium; cardiac muscle failure; and the remaining three from coronary disease. In the remaining forty-two, the results have been classified as:

"Twenty-five—results good—free from rest pain, able to walk well, and in most cases have returned to work.

"Seven—results fair—improvement as regards rest, pain, and general condition but little or none as regards walking and capacity for work.

"Ten—results unsuccessful—no improvement in several cases ending in amputation."

Valdoni⁷ sums up his results of ganglionectomy in nine cases of Buerger's disease as follows: "Upper extremities, one case, subjected to cervicothoracic ganglionectomy, full success; lower extremities, eight cases, subjected to lumbosacral ganglionectomy, four improvements and four failures."

Adson⁸ says, "The comparative results of treatment revealed that, without adequate medical treatment, the incidence of amputation was twenty-five per cent; with medical treatment, it was reduced to fourteen per cent. Fifty-six per cent of the patients who were treated medically were markedly improved; the remainder were subjected to active recurrences. Eighty-three per cent of patients treated surgically returned to gainful occupations, and ampu-

tations of extremities were lowered to four per cent."

Our own results are shown by the following cases operated on by Dr. Budd and myself:

CASE NO. 1. F. O. P., WORLD WAR VETERAN

Admitted to Parker-Budd Clinic and Hospital March 5, 1935, complaining of severe pain in both feet, for which he had been confined to government hospitals in New York State and Tennessee most of the time since 1922. The third toe on right foot had been amputated. Feet were very cold, and pus could be squeezed out of all toes around nails. Patient complained that he could not sleep at night on account of the pain in toes and feet, with pain in legs when walking, causing him to sit right down in the street at times. Has had all the usual treatments, including typhoid serum, normal saline, changing climate. Had toe removed and what appears to be bilateral periarterial sympathectomy in 1933, and he came to us on account of continued excruciating pains, making it impossible for him to walk at times.

Physical examination negative except false teeth. BP, 105/0. Feet were cyanotic, no veins visible, no pulsation palpable.

Bilateral transperitoneal lumbar sympathectomy was done on March 6, 1935.

Patient made an uneventful recovery. The gangrenous spots healed in thirty days. Patient is now enjoying life and has been free from pain since recovering from the operation.

CASE NO. 2. J. K., AGE 45, LABORER

Admitted to Parker-Budd Clinic and Hospital July 25, 1935, complaining of severe burning of the feet, necessitating his sleeping with feet uncovered, excruciating burning pain in toes.

Past history negative, except for injury to right foot, same being mashed in a rock quarry about three and one-half years prior to date of admission to hospital. The top of injured foot became inflamed and after it had healed foot and toes began to itch. Fifth toe was removed from right foot, and, after recovering from this, patient was apparently well until he began to work again

and injured the same foot. Eighteen months later another toe was removed from right foot, and one year later the other foot began to hurt and nail came off of fifth toe. At this time, pains were very severe in feet and legs.

Examination: Five diseased teeth with diseased gums. BP, s 100, d 60. Both feet cold and clammy, marked cyanosis of feet, right foot a little colder than left, some swelling in left foot, with gangrenous sloughing of fourth and fifth toes. No arterial pulsation palpable in either foot.

On July 26, 1935, transperitoneal bilateral ganglionectomy of the second, third, and fourth lumbar ganglia was done. Feet were much warmer before patient was removed from operating room.

Second post-operative day there was some pain in the right heel. Third post-operative day the gangrene had dried up sufficiently so that the dressings were removed from toes. Fourth post-operative day there was very slight pain in the right heel, which was improved on the fifth day. This pain gradually clearing up, patient being out of bed on the twelfth post-operative day.

To the present time the patient has shown very marked improvement, having just slight pain.

We believe that if sympathectomy had not been done, this patient would have lost

at least two toes of the left foot and would still be an invalid suffering excruciating pains in the feet.

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THE RATE OF GROWTH BEFORE BIRTH*

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THE GROWTH of a child, considered in all of its various aspects, has held the interest of people throughout the ages. It is the subject of many scientific investigations and is of practical moment to all practitioners of medicine. The knowledge accumulated about the growth of the child from centuries of lay observations and customary usages and from scientific publications is of such tremendous magnitude that it is difficult to evaluate its various portions. It is generally known, however, that the period between the embryonic stage and birth, the fetal stage, is described by relatively few articles in the medical literature. The establishment and general recognition of the normal rate of growth before birth would be not only interesting but also a valuable aid in dealing with the many mechanical problems that may arise in the practice of obstetrics.

This rate of growth before birth may be measured by anatomical observations of weight, length, and volume increase of perfectly normal specimens. Studies of these measurements in the attempt to integrate a normal growth rate lead at once to the impossibility of graphing a curve of infinite complexity and may well arouse the interest of anyone concerned with medicine. It is easiest perhaps to present our review of authoritative studies and established information in the summary of superimposed graphs.

Keene and Hewer have constructed graphic curves of the rate of growth as determined by weight increase observed in the course of careful anatomical studies. Their opening paragraph reads, "In the course of a full investigation of certain fetal organs, we have collected details concerning the weight of these organs, and, in view of the scarcity of such data, it seems worth while to publish these, although the investigation is not yet completed. The number of cases is admittedly

small, but the rate of development of different organs and the relation of this to complete development of the fetus can be determined only when a sufficient number of reliable observations by various workers is available." After a detailed discussion of their materials used and methods of observations they comment, "The number of cases is small for detailed statistical analysis, but we wish to lay stress on this point, that in the classification of such data it is important to include as 'normal' only those cases that died owing to accidents of birth and that present no abnormal factor whatever; averages arrived at by including all cases, neglecting this point and taking in all fetuses of viable age, will not give the true average figures representing normal development.

"The curves representing the average absolute weight of organs during normal development were plotted through observation of sixty-two cases, and show an actual decrease in weight between the thirty-third and thirty-ninth weeks, but this decrease would probably disappear and an arrest in growth only be shown if a larger number of cases were available. A similar curve showing the total weight of the whole fetus also presents a retardation during this period and should be compared with the curves compiled by us from figures given by other workers in which the same flattening in the curve is seen at corresponding dates. It should be noted that the curves showing increment of fetal weight demonstrate the retardation seen in the other curves even more remarkably. There is no doubt that there is a definite slowing down of the rate of increase in weight both of the fetus and of its individual organs during this period, and it is interesting to note that the thyroid—an organ intimately concerned with the regulation of nitrogen metabolism—shows this retardation at an even earlier date, whilst the spleen and kidney, which are mainly concerned with blood and excretory functions as distinct from meta-

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bolic, show the retardation least of all the organs examined. Until about the middle of the seventh month the fetus has no subcutaneous fat, and in fact very little visible fat at all, and our observations suggest that at this time metabolism is directed toward the laying down of fat, to the detriment of nitrogen retention for the growth of organs, and that later both nitrogen and fat metabolism proceed together more evenly." Keene and Hewer present their curve showing the irregular increase in weight of their own cases in the upper half of Fig. 1, and give Donaldson's similar weight increase curve for comparison below.



Fig. 1. The Keene and Hewer Curves of Weight Increase as published in the *Journal of Obstetrics and Gynecology of the British Empire*, Vol. XXX, No. 3, page 345, 1923.

Meyer studied abstracts and pertinent data of 4,530 cases from the Williams Clinic for the correction and extension of the curve of prenatal growth for length. In the course of a concise discussion of the data, Meyer shows that his graphs are medians and not averages and that the exceedingly large and apparently normal fluctuation necessitates the greatest caution in

the use of any curve of growth for the determination of the age of the fetus even in the latter months of the pregnancy. He also shows that the large percentage of heavy fetuses in William's Clinic suggest the need for caution in the comparison of European and American statistics. Furthermore, he demonstrates that, as has so often been stated, length alone is probably a far better guide than weight alone in the determination of the correctness of unusually long gestations, and that length must be set at practically the normal natal average if it is to be used in conjunction with weight in forensic medicine. Meyer presents his curve, together with the data from which it is derived, based on length in comparison with similar curves plotted by other investigators as is shown in Fig. 2.

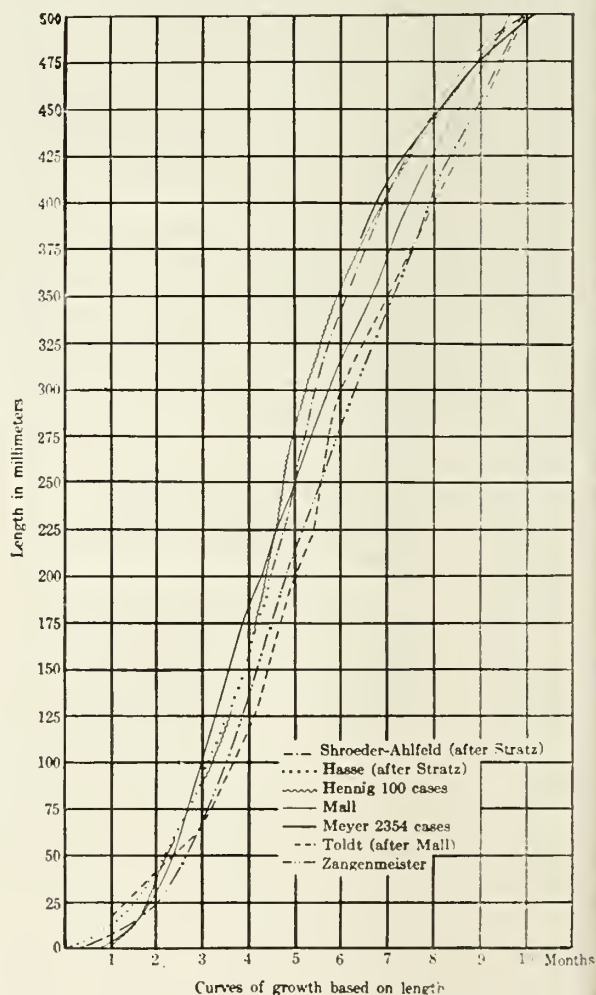


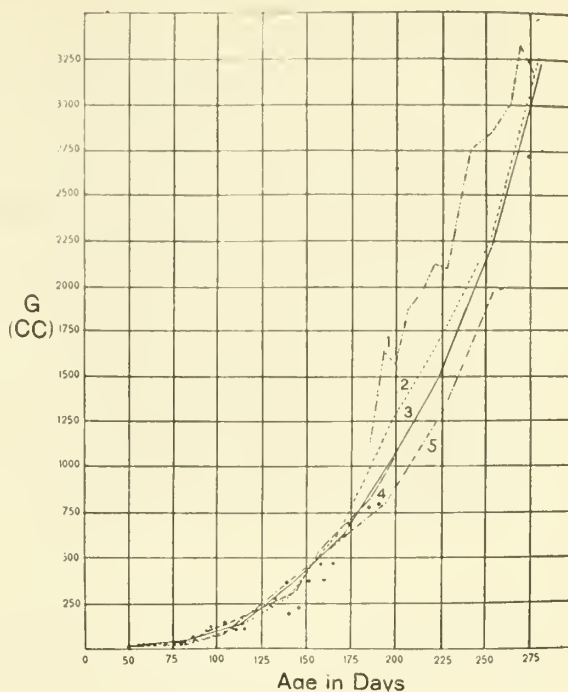
Fig. 2. The Meyer Curves of Length Increase as published in the *Carnegie Institute of Washington, Contributions to Embryology*, Vol. II, No. 4, page 55, 1915.

Jackson presented, before this foregoing data was available, the results of an extensive series of original anatomical observations made principally to fill some of the existing gaps in our knowledge of the general course of prenatal growth. He chose to measure his specimens and the His-Ziegler models by volume rather than by weight and gives an accurate description of the methods used. He discusses his measurements of the growth of the whole body, of the relative growth of the principal parts of the body, of the growth of the individual organs, and comparisons with other species. He furnishes tabulations of his own measurements and curves compiled from these measurements compared with curves of other investigators. He points out the fact that the specific gravity of the total fetus is slightly greater than one, increasing slightly during the second half of fetal life. He summarizes in part: "First—the human ovum increases more than ten thousand times in size during the first month, the embryo proper attaining a weight of about .04 grams. The increase for the succeeding months (relative monthly growth rate) is expressed by the figures 74, 11, 1.75, .82, .67, .50, .47, and .45. The curve of absolute growth after the first month corresponds approximately to the formula:

$$\text{Weight (g)} = \frac{(\text{Age in days})^4}{(37)}$$

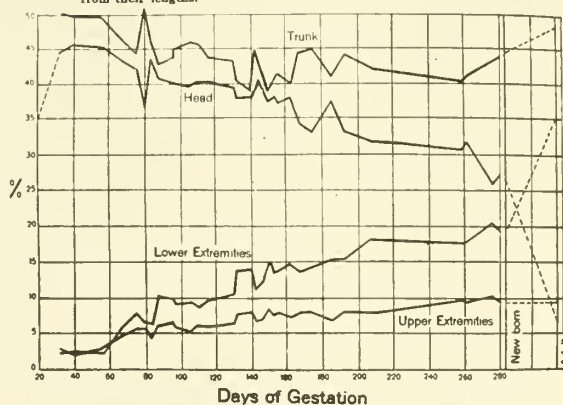
Second—The head attains its relative maximum size, about forty-five per cent of the total body weight, during the second month, thereafter decreasing to about twenty-six per cent at birth. A relatively large embryonic head is characteristic for vertebrates in general." Fig. 3 shows Jackson's curves.

The relatively recent development of accurate radiographic measurements has opened another avenue of approach. From measurements taken at various stages, Ball has constructed a curve, Fig. 4, of the absolute rate of increase in volume of the fetal head. All of the cases Ball measured radiographically and used in the construction of his curve have been classed as normal by close clinical observation before and after delivery.



Curves of absolute prenatal growth. Curve No. 1, data from Ahlfeld; 2, from Fehling; 4, from Legou; 5, from Michella. Curve No. 8 represents the normal curve of growth (weight) constructed by the author.

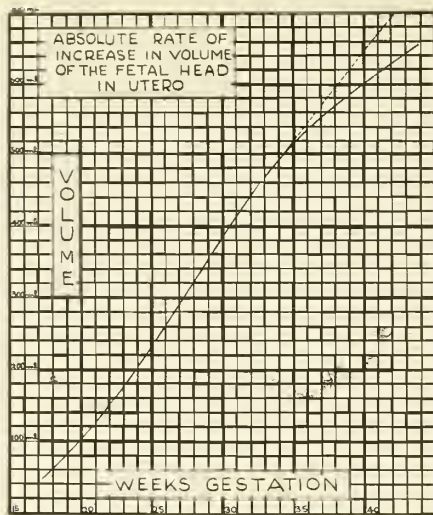
The dots represent the total body volume in cubic centimeters of the specimens studied, the age being estimated from their lengths.



Curves showing relative prenatal growth of the various parts of the body, in specimens studied, the size being expressed in percentage of the total body volume (Table IV). The dotted lines at the right represent the postnatal growth of the corresponding parts (based on data from Meeb).

Fig. 3. The Jackson Curves of Weight Increase shown above and percentage proportions shown below as published in the American Journal of Anatomy, Vol. IX, No. 1, page 119, 1909.

Plotting the averages of all of these curves of anatomical and radiographic measurements on the same coordinates, together with the curve of the probability of survival, as derived for want of authoritative figures from the generally accepted clinical impression, gives us a graph of considerable practical value in obstetrics and



THIS GRAPH PLOTTED FROM RADIOGRAPHIC DATA

Fig. 4. The Curve of Head Volume Increase constructed by Ball, taken by permission from the original case.

pediatrics. Allowing for errors in draftsmanship, we see that both the length and weight do not increase as smooth curves, and anatomical and radiographic measurements of the head parallel each other fairly closely. A consideration of the period between the previable stage and term, that is the period of prematurity, may be clarified in individual problems when compared with the graphic representation of the generally accepted clinical impression of the probability of survival. The inclined line separating the period of prematurity from term, the line from forty-five centimeters in length to 2,500 grams in weight, shows the varying durations of time necessary for the fetus to pass from the premature to the term stage as well as the relatively long period of term.

It is suggested that this graph, Fig. 5, together with immediate length and weight measurements of the newborn child, may help in the quick and more accurate determination of the stage of its development. Local, racial, and familial tendencies should not be overlooked in any readings. Further-

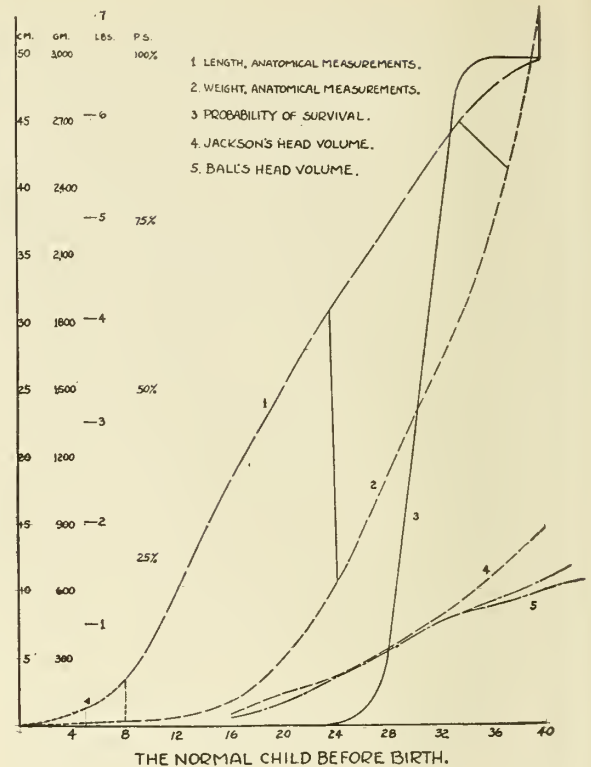


Fig. 5. The summary of the preceding graphs.

more, it is suggested that by the use of the head measurements this graph may also assist in the orientation of the various problems at hand in any given case before delivery.

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THE RELIEF OF PAIN IN OBSTETRICS WITH PERNOCTON

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EVEN AMONG the most primitive people aid has always been given to women in childbirth. About 3,000 B.C., women began to be aided by priests, and from then until the time of Galen, 100 A.D., marked progress was made in the art of obstetrics, considering the lack of anatomical knowledge. Following this came the Dark Ages, and what little knowledge there was was lost. Beginning in the middle of the sixteenth century with the rediscovery of the podalic version, the art of aiding childbearing women began to take its place among the other sciences. In 1847, Semmelweis discovered the infectious nature of puerperal fever, and since that time obstetrics has made marked advance in all of its phases.

From time immemorial there have been attempts to lessen the pains of labor and childbirth. The primitive people tried to frighten them away with noises. This was followed by the brewing of herbs and spices in the lying-in chamber. But the most advanced step of all was when Simpson of England, in 1847, popularized the use of chloroform during childbirth when he gave it to the Queen of England. Then came attempts to help the expectant mother during labor. Morphine was the first drug to be used, and that was introduced into this country in 1914. This was a great step, but was not entirely satisfactory due to the danger of narcotization of the child. Early in the third decade of the twentieth century, Gwathmey's quinine-ether-oil *enema* marked another advance. This was not entirely satisfactory, and the barbitals began to be used in the form of sodium amytal. Due to the prolongation of sleep, the uncertainty of the drug's effect on the labor pains, and the closeness of the therapeutic to the lethal dosage, other drugs were looked for.

Pernocton was first used by Bumm, of

Berlin, in 1926-27, as an adjunct to surgical anesthesia. Experimenting on dogs, he found the therapeutic dose was one to ten as compared with the lethal dose, and that there was no tissue damage.

In 1929, Vogt of Germany reported fifteen hundred obstetrical cases on which this drug was used with most favorable results. Also in 1929, Gauss reported one hundred fifty cases in which Pernocton was supplemented with scopolamine with good results in all cases.

In 1930, Pernocton was first used in this country in obstetrics at Sloane Hospital for Women, in New York City, and Brown, Moloy, and Laird in 1931 reported one hundred thirty-three obstetrical cases and twenty gynecological cases from that institution. Out of this one hundred thirty-three cases, only three failed to get the desired results. Ten babies were asphyxiated at birth, but were easily revived. The writers reported two deaths — one, maternal, who died three hours and twenty minutes after delivery from bronchopneumonia; and one, fetal, death being caused by a broken neck. Neither death could be charged to Pernocton.

Stedje, of the Robert Packer Hospital, Sayre, Pennsylvania, reports that since February, 1931, Pernocton has been used on all of their obstetrical cases, with most gratifying results. He claims that, aside from its analgesic qualities, it hastens labor by softening the tissues of the cervix and perineum.

McKesson and McCarthy of Toledo, Ohio, in 1930 reported very favorably on Pernocton as a preanesthetic hypnotic. They showed that it had a more powerful effect, and caused less fall in blood pressure, less restlessness and excitement during the recovery stage, and a shorter period of unconsciousness than sodium amytal.

Goldschmidt reports fifty-two labor cases, Goetz fifty cases, Hole one hundred twenty cases, Wolfgang Schmidt one hundred cases,

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without a mortality. Hardung reports fifty-two cases, with one death from respiratory failure. This case had been given morphine shortly before the Pernocton, and death was laid to the cumulative effect of the two drugs.

Pernocton is the trade name for a ten per cent solution of the sodium salt of the secondary butyl beta-bromallyl barbituric acid. It belongs to the group of hydrocarbons which possess the ability to produce narcosis in varying degrees of effectiveness and toxicity. The effectiveness of these carbohydrates depends on the length of the side chain; the longer the side chain the more insoluble, less volatile, and absorbable the drug. An insoluble drug is dangerous when injected intravenously. Pernocton has an effective side chain, not long enough to make it nonvolatile nor insoluble. In addition, its hypnotic action is increased by the replacement of one of the hydrogen ions by a halogen, bromin.

Pernocton is rapidly broken down in the body. Only three-tenths of one per cent to five-tenths of one per cent being found unchanged in the urine of patients. Twelve to seventeen per cent is transformed into the secondary butyl acetyl barbituric acid, which is a harmless carbohydrate. The rest of the drug is decomposed in the body.

Fretwurst and Rueder of Hamburg, Germany, on examining the urine of both the mother and child, the amniotic fluid, and the blood from the umbilical vein, report that Pernocton is not transmitted from the mother to the child.

The manufacturers report severe nephritic or cardiac diseases as contraindications for the drug. Experimenters have been unable to show any renal or cardiac damage due to this drug.

Bumm gives the therapeutic dose as one cc. of the ten per cent solution per thirty pounds of body weight. In obstetrics, the dose varies from four and four-tenths (4.4) to six and six-tenths (6.6) cc., regardless of the size of the patient. It may be given intravenously or intramuscularly. If the patient begins to regain consciousness, one-half dose may be repeated any time after one and one-half hours. This may be repeated with perfect safety three to five

times, or more, if labor extends over a long period of time. If given intravenously, care must be taken not to get any of the drug outside of the vein, because of the danger of sloughs. Kautz of Cincinnati reports three sloughs in a series of fifty cases.

Pernocton has a pH of nine and eight-tenths, consequently the intravenous injection must be slow—not more than one cc. per minute *by the clock*—in order to allow the buffer qualities of the blood to take care of the alkalinity of the drug. Otherwise there will be marked excitement and a sudden drop in blood pressure.

The technique of the injection is simple. The area over the cubital vein is cleansed with iodine and alcohol, and with a syringe and small caliber needle the drug is injected as outlined above. The injection is given preferably between pains. The arm should be held to prevent movement by the patient, which would allow the escape of some of the drug around the vein. The room is darkened and all noise excluded. The best results will be obtained if the confidence and cooperation of the patient can be gained beforehand.

During a period from June, 1931, to January 15, 1932, I was able to gather at the Memphis General Hospital the records of sixty-two unselected obstetrical cases on which Pernocton analgesia was used. These cases included white and negro women, primiparas, multiparas, normal cases, forcep deliveries, versions, and one Caesarean section. In this group were also some pre-eclamptic patients, and the ages varied from fourteen to thirty-three years. One tubercular case delivered under this analgesia with perfect results, and with no flare-up of the lung condition. As far as we could observe, the para, age, color, or physical condition of the patient played no part in the effectiveness of the analgesia. The mental status of the patient did play a part. In patients of higher intelligence, whose absolute confidence and cooperation we could gain, a much better result was obtained.

The drug was given at different times throughout the first and second stages of labor. The ideal time for its administra-

tion is when the cervix of a primipara is three fingers dilated, and that of a multipara two fingers. One patient had Pernoc-ton fourteen hours before delivery; another only ten minutes before, and both later gave similar statements that they remembered nothing. The length of the analgesia, I am unable to say. In eleven cases, it lasted for three hours or more; in one case seven and one-half hours; and in another fourteen hours.

The blood pressure was not changed to any extent. Seventeen cases showed slight elevation of both systolic and diastolic pressure—the average elevation being ten mm. of mercury, and the highest being twenty-two mm. of mercury. Fourteen cases showed a drop in blood pressure—the average was ten mm. of mercury, and the largest drop was twenty mm. of mercury, seen in two cases. Within fifteen to thirty minutes the blood pressure had regained its former volume. Twenty cases showed no change in blood pressure. In eleven cases, the blood pressure was not followed closely enough for us to include, although there was no marked change in any of these cases.

The majority of our patients showed a slight increase in the pulse rate. The highest noted was a rise from one hundred to one hundred fifty beats per minute, but within one-half hour the pulse rate had fallen to one hundred beats per minute. The average increase was ten beats per minute. There was no change in the volume or rhythm of the pulse.

Respirations showed deepening, but there was no change in rate or regularity.

Following the injection of Pernoc-ton, thirty-one cases showed no change in the frequency, strength, or duration of labor pains. In two cases only the pains were slowed, but within fifteen minutes returned to their former frequency, and showed an increase in the strength of contractions. In twenty-nine cases the pains increased in frequency and duration following the injection of the drug.

In our series of sixty-two cases, the results were recorded as good in fifty-three cases. Twelve of these cases were delivered with no other anesthesia, and ten were repaired under Pernoc-ton alone. Of these

twelve, only five of them remembered the birth of the child, and they said later that they suffered no pain. Forty-eight of the fifty-three cases claimed to remember nothing about their labor and delivery following the injection of Pernoc-ton. Eight cases were reported as fair. These women remembered nothing, and rested well between pains, but awoke during the pains and remembered them slightly. One case remembered all details of her labor, but claimed that the pains were lessened. This case is recorded as poor.

Several of our patients became highly excited during the pains, and some had to be restrained. The remainder of our series rolled and groaned during a pain. The patients who became highly excited were the ones of lower intelligence, whose confidence and cooperation we could not obtain, and who were terror-stricken at being in a hospital and at being put to sleep.

The puerperium was uneventful in fifty-two cases. Ten cases showed some complications—three had a mild sapremia, three cystitis, two pyelitis, and two had infection of episiotomy wounds. None of these conditions could in any way be attributed to the drug. All recovered, and there were no maternal deaths.

In our entire series there were no changes in the fetal heart sounds either in rate, rhythm, or quality. Twenty-one cases were delivered within one hour after the drug was given, and seventeen cases between one and two hours following the injection. Three babies were born in a state of asphyxia. Two of these were following long labors; one was a premature baby whose mother had been given morphine before the Pernoc-ton injection. All were easily resuscitated. Five babies were born dead. The mother of one was syphilitic and had thirty-five hours of dry labor. The fetal heart was present when Pernoc-ton was given, but was not affected. She was delivered of a dead baby twelve hours later by a Poro-Caesarean section. One was a case of placenta previa, and the fetal heart could not be obtained before the drug was given. One was a premature macerated fetus, and was a twin. The other twin was about two months more mature, and was in good condition. One

was a premature macerated fetus. One was a monster and lived one hour after delivery. None of these five fetal deaths could be blamed on Pernocton.

CONCLUSIONS

From our observations on Pernocton analgesia in obstetrics, we have reached the following conclusions:

1. Pernocton is a safe analgesia for the mother.
2. It has no effect on the newborn.
3. It is effective.
4. There is no effect on blood pressure.
5. Labor pains are stimulated by its administration.
6. Patients are all favorably impressed.
7. Pernocton causes some excitement during contraction.
8. Last, but not least, it is easy to administer.

Since the above paper was prepared, I have used Pernocton analgesia in between two hundred fifty and three hundred additional obstetrical cases. The results obtained in these cases were similar to those reported above.

NOTE.—The name Pernocton has since been changed to Pernoston-Sodium.

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IF YOUR MEMBERSHIP DUES
FOR 1936 ARE NOT PAID,
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JOURNAL AFTER THIS ISSUE

PHYSICAL REACTIONS TO FUNCTIONAL DISORDERS*

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IN JANUARY, 1933, a married woman, age 28 years, came to me for examination. She has suffered with indigestion since early childhood. For six years she has scarcely eaten a meal without fullness, belching, or sour stomach. She has abdominal cramps and soreness along the colon. So many foods disagree that her diet is insufficient to maintain her strength. She has alternate constipation and diarrhea. For the past year she has suffered with protruding, bleeding hemorrhoids. The appendix was removed without any apparent benefit.

She has periodic sick headaches accompanied by vertigo, nausea, and vomiting. Following the headache she often has urticaria. During the winter months she has frequent sore throat, sneezing, and a profuse nasal discharge.

She has pain in her bladder, polyuria, nocturia, and a sense of weight and pressure in the pelvis. Her menstruation is irregular and painful, with profuse leukorrhea and backache.

Her hands and feet are always cold. Exertion produces shortness of breath and palpitation. There is a choking sensation in her throat, a tightness in the chest, and roaring in her ears. She suffers with pains in her neck, shoulders, and spine.

There is rarely a night in which sleep is satisfactory. She used sedatives for a long while, but recently even large doses of bromides have failed to produce sleep.

She is extremely nervous, irritable, depressed, and emotional. People and noise irritate her so that she avoids crowds and tries to keep the children away from her.

She has been confined to bed most of the time for six months. She is taking four kinds of medicine but seems to be suffering more pain and growing weaker.

Examination.—Weight, 115 pounds. The skin is pale, the hands cold and moist. Her

teeth are well kept, the gums healthy. The tonsils are cryptic and inflamed. The heart and lungs are normal. There is soreness all along the colon. The pelvic floor is moderately lacerated with considerable sagging of the bladder. The uterus is normal in size, movable but tender. The cervix is bilaterally lacerated and infected. The tendon reflexes are hyperactive. The neurological examination is negative. Blood pressure, 120 75; pulse 110. Proctoscopic examination revealed large bleeding hemorrhoids. There is no ulceration in the rectum.

Laboratory.—Urine normal. Leukocytes 8000; Hemoglobin sixty-eight per cent, R.B.C. 3,800,000. Wassermann negative. The stools contained no parasites. B. M. R. was minus two.

X-ray. — Chest normal. Stomach enlarged, atonic, and contains one-third of barium at five hours. The small bowel is hypermotile. The colon is spastic throughout. The gall bladder, after oral tetradol, shows about fifty per cent concentration of the dye with practically no emptying after a fat meal.

Summary.—From the clinical study of this patient it is evident that she has a diminished function of the gall bladder, spastic colitis, chronic tonsillitis, migraine, urticaria, dysmenorrhea, hemorrhoids, and secondary anemia.

Why is it that this young woman is an invalid with so many of her organs diseased? Are the manifest physical disorders producing her symptoms or is there an unbalance in the nervous system which is responsible for her invalidism? These questions can be answered only by a thorough study of the patient's environmental background.

She is the only child of doting parents. During her early childhood she had violent temper and always managed to have everything she desired. She rebelled at any restraints placed upon her, always reacting

*Read before the Tennessee State Medical Association, Nashville, April 9, 10, 11, 1935.

by temper and weeping until she got what she wanted. As she grew up she became more self-willed and her parents, to avoid conflict, discontinued attempts at restraint. During her college career she spent all her spare time at social functions and rarely rested or had enough sleep. Consequently, when she finished college, she was exhausted, irritable, restless, and physically undeveloped.

Soon after leaving college she married a young minister. Her ideals of life were exactly opposite to those of her quiet-living husband. Conflict was inevitable. She tried for a while to adjust herself to the new order of living. She became pregnant, and one pregnancy followed another at two-year intervals. She was nauseated throughout each pregnancy and became more and more depressed and nervous. Her mother came to live with her, and from that date the patient has been confined to her bed.

The clinical study of this patient revealed sufficient pathology to account for many of her complaints, but the personality and environmental factors give the real clue to the psychic instability, which is probably the primary cause of her illness.

The treatment, therefore, must start with the rebuilding of the exhausted nervous system. The success of this treatment depended upon the thorough understanding and cooperation of the patient and her family. The patient and her husband were given the entire facts, and they willingly agreed to the program of treatment.

The patient was removed to a quiet place. No visitors were permitted. All drugs were withdrawn except large doses of sedatives to assure rest. She was given a full diet. At first, she refused to eat, but two days of duodenal tube feeding restored her appetite. The sedatives were gradually withdrawn, and at the end of ten days she was taking no drugs.

Psychotherapy and occupational therapy kept her busy, and she slowly began to improve. At the end of one month she was walking one mile each day, was sleeping well, and had gained six pounds in weight. She returned home in two months to take up her work. At the end of one year she

is physically stronger and happier than she has been in her entire life. Most of the previous symptoms have disappeared. She walks two miles every day and works in her garden for at least one hour each morning. Her recovery has been due to rest from fatigue, readjustment of environmental conditions, and to following the simple rules of living.

Incidentally, the gall-bladder function has returned to normal, the headaches and urticaria have disappeared, the pelvic distress has subsided, her elimination has improved, and she has become a useful, happy citizen.

Edward Weiss,¹ in a recent study of 200 private office patients, offers the following classification:

1. Those in whom the illness seemed to depend entirely on emotional problems.
2. Those in whom the illness seemed in part dependent upon an emotional problem.
3. Those in whom an emotional problem did not seem to enter into the cause of the illness.

Thirty-five per cent were placed in the first group, thirty-five per cent in the second, and thirty in the third. These percentages are probably not accurate for the cross section of the average physician's practice, but they serve to emphasize the large number of emotional and psychic patients which are seen in modern practice.

The differentiation of the neurosis from organic disease is one of the most difficult problems in medicine. When it is realized that there is a nervous counterpart for every organic disease, that no form of physical damage exists which is not imitated and reproduced by sensations practically identical with those accompanying organic disease, it is easy to understand the enormous variety of nervous symptoms and the unlimited manifestations of nervous discomfort.

The individual with a neurosis is likely to be timid, afraid, lacking in self-confidence, subject to emotional instability, or reticent and suppressed, unable to grasp the hard facts of life or unwilling to accept them, uncertain about the conduct of the past, worried and harried about future events, unable to fit himself into the harsh inequali-

ties of life, out of sympathy with his fellow men, with family or domestic relations, and unable to cope with his sex problems.

Physically, he is usually underbuilt, only fairly well-nourished, with cold, moist palms, rapid pulse, anxious mien; with spastic colon, exaggerated peripheral reflexes, and is hypersensitive to pain.

With a patient presenting such an emotional and physical background, the physician may well be cautious in condemning certain organs for removal or in prescribing drugs and diets, with the hope of restoring normal function. Too often such a patient grows worse, because what he needs is not surgery or diet or drugs but a readjustment of ideas and rest. Such a plan of treatment, however, requires an instructive understanding of the neurotic individual, hours of time, and a great deal of patience.

It is easy to dismiss a nervous patient with a word of advice, a prescription, and a diet list or to advise the removal of a poorly functioning organ. The present-day physician, however, must realize that more than half of his work is directed to the overcoming of functional, not organic, diseases. The whole structure of modern medical treatment is based upon the cause and prevention of illness. Just so must we deal with the functional disorders, by searching for the damaging root idea, which has occasioned the emotional disturbances, anxiety, fear, apprehension or worry, and guiding the patient through the conflicts with the inner self.

After the nervous balance has been restored and physical strength renewed, surgical procedures for chronic conditions may be safely done without fear of further damaging the nervous system.

When the physical reactions of deranged organs or systems are known to be due to functional disorders, from whatever cause, surgical procedures merely add insult to injury and further damage the already breaking nervous system.

The only sound and abiding basis for the cure of functional disorders, on a psychic or nervous basis, is rational reeducation. Just as definitely as skilled intelligence is

necessary to decide the dose of diphtheria antitoxin, to cut short an attack of that dreaded disease, so certainly must there be judgment and intelligence in the successful treatment of the functional nervous disorders.

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DISCUSSION

DR. A. W. HARRIS (Nashville): Mr. President and Gentlemen: Clear and practical papers like this are of great value to the profession in destroying the past isolation of medicine and psychiatry. A psychiatric approach on the part of the internist toward his patient is fundamental in all diagnosis. There is probably not a more powerful force for good than the proper attitude of the physician toward the mental problems of his patient, and an adequate study of each individual case means a thorough evaluation and understanding of the assets and liabilities from the intellectual, social, and emotional viewpoint, always bearing in mind that the psychic factors are often concealed, even to the patient, and are frequently very difficult to bring out and often more difficult to get admitted when they are unearthed.

Patients like the one Dr. Sanders has described are found in everyone's office, be he internist, surgeon, or specialist. We are all prone to look too sharply on the case in the light of our special field of training and thought, and we are constantly being accused, and possibly justly so, of seeing everything as a psychoneurosis. A neurologist who overlooks an organic disease never hears the end of it, but let the general man, the surgeon, the specialist, neglect the emotional element in his patient in his thorough examination and treatment, and he can cause as much suffering and do as much harm as the other has done, even though the patient still lives.

The figures Dr. Sanders quoted from Weiss have been reported by others, and we feel sure they are quite conservative and that there are few illnesses without some emotional element. If one accepts this, there is no need to further emphasize the importance of a psychiatric approach to all patients.

There is little in the paper to criticize or to disagree with. We differ only in minor details. The first step in the management of the patient is gaining the confidence. Without this, very little if anything can be accomplished, and to secure this requires tact, diplomacy, and patience. Once this has been done, many of our difficulties are over, and with this we can command the wholehearted cooperation of the patient, and we must have it from the family also.

I want to congratulate Dr. Sanders on the rapid recovery of his patient and commend his stand in not operating for minor surgical conditions on

these patients until the emotional factors are relieved. They stand surgery poorly, and their recovery most often is retarded. Only the most urgent surgical conditions should be met until they have recovered emotionally.

I want to thank the doctor for bringing this subject before this body.

DR. K. S. HOWLETT (Franklin): I have the honor and the very doubtful privilege of being the last man on the program. The late stayers, those who remain until the end of a medical meeting, certainly deserve a good paper, and I feel sure that the paper presented by Dr. Sanders has given you that. He has give us not a hypothetical but an actual case, clearly described, and has brought out symptoms that we as general practitioners meet in our offices, as Dr. Harris has suggested, practically every day.

This patient with indigestion, sour belching, dysmenorrhea, leukorrhea, backache, cold hands and feet, globus hystericus presents a syndrome that is very familiar to all of us. I think that Dr. Sanders is to be congratulated that, notwithstanding the real pathology that this woman presented, he kept her out of the hands of the surgeon.

I recall a patient of my own who during the last twenty years has had her sinuses opened, her tonsils removed, a thyroid operation, the appendix taken out, an operation upon the tubes and ovaries, an operation for hemorrhoids. Notwithstanding that, she is still living and is just about as well as when she began, and now, like Alexander who wept because there were no more worlds to conquer, she grieves because there are no other territories left for the surgeon to invade.

Dr. Sanders is also to be congratulated, it strikes me, for going back and getting the history of this case, and again we have a very familiar history: indulgent parents, violent temper, a marriage which took her into entirely different surroundings from what she was used to, surroundings to which it was hard for her to adjust herself. I recall a patient that came under my care only after she was married, whose symptoms were hard to analyze and to get a line on. I fortunately had an opportunity to know her father soon after this, and he made a very significant statement, which was that he had found out almost by accident that during this woman's unmarried womanhood she had always carried within her garter a little tablet that would cause immediate death if she were to take it,

and that she had it in her mind that if things did not go just to suit her she would take this at any time. My heart almost bled for the old man when I considered what he had gone through during those years, and it did bleed for the husband when I considered what he must go through with in the years to come.

Dr. Sanders is again to be congratulated upon getting the cooperation of this patient and of her husband. My observation has been that these patients are the very ones that are the hardest to get to cooperate; they are antagonistic to begin with. I recall one patient that I had who had a real pathology, just as his patient had, tuberculous infection in the lung. Unfortunately the doctors who had seen her put too much stress upon that. When that fact was fully recognized, she was put under the care of some of the most distinguished psychiatrists. We found that this woman, when the doctor would try to psychoanalyze her, would immediately begin to psychoanalyze him, and she was so smooth at it that she was almost more successful than the doctor. This woman is now in a hospital for the insane, where she might not be if she had ever come under the care of anybody who could have gotten her cooperation as Dr. Sanders did with his patient.

I was struck with the point that Dr. Sanders made that when his patient refused to eat he used the duodenal tube and her appetite improved at once. I have a patient just now that was formerly under the care of Dr. Seale Harris at Birmingham, and reading between the lines I am sure from her statement as well as from the statement that I had from Dr. Harris that he used the duodenal tube in this patient for the same purpose and with practically the same success that Dr. Sanders had in his patient.

DR. L. C. SANDERS (closing): I had only two reasons for bringing this subject before you, first, to urge a thorough study of the emotional as well as the physical background of all patients presenting nervous symptoms; second, to offer these patients the same practical treatment we give to those suffering with organic disease. This treatment must be on a sound basis directed toward the removal of the cause and to reeducation, to rest from fatigue, to overcoming fear, and to adjustment of emotional factors which disturb and distort normal function.

ABDOMINAL SURGERY IN CHILDREN*

RICHARD A. BARR, M.D., F.A.C.S., Nashville

MY INDIVIDUAL experience with abdominal surgery in children is largely limited to three troubles, congenital pyloric stenosis, intussusception, and appendicitis; and, as you see, two are purely mechanical in their primary action on the intestinal tract and may never produce symptoms of any other nature and may never produce any serious pathological changes, though naturally intussusception, or invagination, ordinarily does.

Without exception the cases of congenital pyloric stenosis I have seen have been in infants under three months of age, and most frequently the patient's age has been about three or four weeks. Ramstedt states that symptoms do not persist beyond the fourth month of life, though changes at the pylorus are found in middle life or even later, which can only be explained as the aftermath of this trouble. I have recently had two such cases.

In intussusception the great majority of my patients have been under one year of age and, of course, both of these conditions have merely run true to form in this respect. I may say in passing that for some unjustified reason a diagnosis of intussusception seems to come readily to the medical mind as the cause of intestinal obstruction in adults up to middle life, while in old age fecal impaction is most frequently suspected. I have never seen intussusception in an adult (eleven years oldest) except as secondary pathology, and I have never seen any case of impaction above the rectum at any age unless there was stricture as the primary trouble.

The infant with pyloric stenosis is not sick except as the result of starvation. Here one who looks with some uncertainty at the question of acidosis will probably notice how gallantly these little fellows withstand the loss of food and water, or at least the failure of food and water to get beyond

the stomach. The loss of water per anum (or at least the condition causing it) is much more promptly serious than failure to get water absorbed. Babies who vomit food given them stand starvation so well that one is justified in thinking that possibly something more than starvation is needed to produce so-called starvation acidosis.

Let it be recorded to my disgrace that I have never felt to my own satisfaction the tumor of congenital pyloric stenosis until I had my finger in the peritoneal cavity and sometimes not even then. The peristaltic wave in the stomach in pyloric stenosis is clearly seen if the baby is starved long enough to get his belly wall thin and his stomach muscle has been thickened sufficiently by its efforts to overcome the obstruction. Clear-cut evidence along this line is not by any means proof of intelligent observation up to that point. It seems likely that a diagnosis should be made before gastric peristalsis becomes too plain.

A newborn child that rejects food and water without showing evidence of illness, and especially when constipation instead of diarrhea is present, should come at once under suspicion of having congenital pyloric stenosis. If shifting the diet does not promptly get results, X-ray investigation should be made. Waiting for palpable tumor and visible peristaltic wave I do not believe to be justifiable, possibly because I can never find the first and frequently have more difficulty than others in assuring myself of the presence of the latter. On one occasion each of several consultants saw a wave when I could not, and developments proved there was nothing wrong except that the baby could not handle human milk or cow's milk, only goat's milk. You can see that either no wave was present or that pyloric stenosis can be closely simulated by functional disorder.

We will omit discussion of the cause and the nature of the pyloric tumor in congenital pyloric stenosis since such discussion is of

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purely academic value to us, and opinion among surgeons and internists is largely a matter of choosing sides. Since most of us do not know one tissue from another after any marked changes from normal have taken place, we side with the so-called authority whose theory appeals to us most.

Surgical technic as applied is not pertinent here, and anyway surgical opinion has pretty well gravitated to uniform use of the Fredet-Ramstedt, or "Weber-Ramstedt" as Ramstedt himself calls it, operation with what to me are useless and dangerous attempts at refinement. This operation has for its purpose division of the peritoneal and muscular coats with exposure of the submucosa.

Intussusception too, as already stated, is not a disease but simple telescoping of the bowel with possibilities of mechanical obstruction to the intestinal tract. It is the one possible obstructive condition with *acute* onset which may not produce complete obstruction, or even any demonstrable obstruction. For that reason among others I have always felt that it was a mistake to include it under the general head of "intestinal obstruction." It is a distinct condition and merits individual consideration. Even when complete obstruction to the lumen of the bowel is produced, you still have, and with relative increase, the discharge from the anus of blood and mucus, simulating the common infective process involving the bowel mucosa. Here again we have a condition the cause of which is undetermined in spite of many positive opinions on the subject (an interesting recently advanced theory is that intussusception is a manifestation of tetany which in turn is due to avitaminosis). Whatever the cause, we do know that as found it almost uniformly occurs in healthy boy babies under one year of age and involves most frequently the ileum and colon with the ileocecal valve and the appendix at or near the apex (or anal end) of the invaginated gut. Every case in my experience has been of this type. Occasionally the ileum slips through the ileocecal valve, which is then the neck, not the apex, of the intussusception. Since early destructive change in the invaginated bowel is rather the exception, we have in most in-

stances after reaction from the early shock a condition that is more painful than sickening so to speak. The pain is definitely and suggestively paroxysmal but because the obstruction is low, vomiting is not a marked feature. Offhand we might say that the symptoms do not properly conform to either obstruction or enterocolitis, to use this last term merely to suggest digestive or infective troubles involving the mucosa primarily. Its symptoms suggest, and in a way it is, a mixture of the two, and this mixture should attract our prompt attention.

Here again the tumor is none too readily felt by me in many instances unless the apex is in the rectum, and here again I believe in early use of X-ray after the child and the bowel have been relaxed with opium or other antispasmodic. Barium or other enema that you wish retained under pressure by a baby, or even by adults in some instances, has little chance of success unless the patient is pretty well narcotized.

The regularity with which the colon is involved in intussusception makes X-ray investigation very helpful, and the barium enema carefully used might even result in disinvagination.

Pauliquen of Brest, who claims sixty per cent of successful results if used early, uses 200 grams of barium in a litre of water. The can is elevated to a height of four feet. The injection is always made under fluoroscopic inspection. To prove good reduction he says the barium should enter the ileum freely.

As with congenital pyloric stenosis so with intussusception, we will omit technical description of surgical procedures as inappropriate. Disinvagination is usually possible when surgery is finally instituted, and, of course, it is always possible to disinvaginate when operation is done sufficiently early.

As to medical treatment in these two conditions, no matter what its etiology once, that the definite tumor of congenital pyloric stenosis has formed the value of any medical or expectant treatment is something that I cannot visualize. Though excellent results have been reported in *suspected* stenosis from the use of radium and X-ray, from my

observation of the reaction from real radiation of the abdominal viscera in adults, I have my doubts as to whether the pyloric tumor could be located and then rayed heavily enough through the overhanging liver to get any effect on the tumor without causing even more disastrous results than the stenosis produces. You are likely to exchange simple for complicated pathology, and for pathology that may get progressively worse for the weeks during which you gradually get the full effect of the rays.

So too with intussusception, in my opinion, any nonsurgical measure other than the careful use of the barium enema (primarily for diagnosis but with hope of possible disinvagination) is not justifiable, as it will lead to delay and increase the final surgical risk.

Leaving, as it must be, the question of medical treatment (its character and duration) in the hands of the internists and pediatricians the surgeon's real task in both conditions is one of diagnosis. Once the diagnosis is made, the question is not what should be done but how promptly arrangements can be made for operation. The surgeon is aided in diagnosis by the accentuation of symptoms during the time lost before operation though surgical risk is increased. Probably surgeons who do not see cases early profit more in many conditions in escaping the nervous strain of uncertain diagnosis than they realize. The strain of desperate surgery is bad enough, and the damage to one's practice from surgical deaths gives one plenty to worry about, but there is, as the medical man sees it, an even greater strain on him, for he must neither make too precipitate a surgical diagnosis nor delay too long. A mistake in either case may cause both economic and professional damage. We all have our troubles, and I am sure that being conscientious and intelligent will cure all of them.

Appendicitis in children under four years of age I have usually seen in the form of appendiceal abscess. It is generally agreed that appendicitis in children is relatively infrequent and particularly so in infants. It is possibly true that children are in general less resistant to infection than adults, but some little fellows do show remarkable

individual resistance, and as I look back over my own limited experience I am struck with the ability of the child's peritoneum to localize infection of appendiceal origin. The generalized infections, as I have seen them, have been due to the pneumococcus whose avenue of infection is usually figured to be the genitals.

In somewhat older children, who can understand and answer questions, I have found no essential difference in symptoms from those of appendicitis in adults. Children frequently say that they had headache the day before abdominal symptoms developed, and nausea (or nausea and vomiting) often precedes pain in the cases I see. Certainly vomiting is a more frequent symptom in children than in adults, though not always present by any means. Even though so distinguished and able an authority as Sir Berkeley Moynihan is quoted as stating that if pain is not the first symptom you can exclude appendicitis, in my opinion, the most stupid possible attitude one can take in appendicitis is to expect any regular order of symptoms or to insist on any single symptom being inevitably present. Anyone's first ten cases of "American" appendicitis will teach him better than that if he observes and questions the patients carefully.

The temperature range in children is naturally higher than with adults, but even little fellows with appendicitis may have a normal temperature and normal pulse rate before complications develop. With children as with adults the leucocyte count in appendicitis can run from normal to 40,000, and a high count is of no value in differential diagnosis; for example, it does not necessarily point to pneumonia. Diarrhea when present adds greatly to the difficulty of early diagnosis in children as in adults and at any age is always a danger signal.

The difficulty of physical examination in children is well known, and I know of no way making it easy. Rectal examination is frequently very helpful. The entire pelvis in children can be searched by a finger in the rectum, and the smaller the child the easier this is, not only because of the smaller pelvis, but for the additional reason that infants and very small children accept the

procedure more readily than those somewhat older.

Everyone realizes the danger of mistaking pneumonia for appendicitis. Far be it from me to attempt to tell anyone how to make the differentiation. I always try to put the burden of proving or disproving the presence of pneumonia on some medical man, though I realize that if I could prove appendicitis it would seldom be necessary for him to worry about pneumonia, as the two conditions are not often associated. Holland's suggestion that patients with pneumonia sleep while those with appendicitis neither sleep nor let others sleep seems to me fragile support for a weighty decision.

Those who know say that X-ray is most helpful in differentiation; in fact, I rather suspect the evidence adduced by it must in most cases be the determining factor in differential diagnosis between pneumonia and appendicitis in small children, but sometimes even X-ray leaves us in doubt.

In case of final doubt, my advice is to explore under local anesthesia, though I have seen ether apparently do good in pneumonia in both children and adults. Ether pneumonia is one of the exploded myths. More pneumonia and other pulmonary complications follow spinal anesthesia, for instance, than straight ether in some hospitals. Local anesthesia is my preference in infants who need abdominal surgery, and straight ether is my preference for children up to eight or ten years of age when gas induction may be added. Of course no set rule can be applied.

It is difficult for anyone to preserve his equilibrium when performing on such mental gymnastic apparatus as "endocrine," "acidosis," or "alkalosis," and even upon such simple appliances as "starvation" and "dehydration," yet our profession seems to think that just memorizing these words and their glib use puts one in an authoritative position. I have had one or another of these unloaded guns drawn on me until I have quit putting up my hands.

Our profession is perilously near hydrotherapy except that we add everything from sodium chloride to blood cells to our fluid which is infused and injected more or less

continuously. I have seen patients so waterlogged as a result that every wrinkle in the sheet made a permanent impression.

Even good things can be overdone, as floods prove at times, and certainly it is well to keep in mind that failure to get food and water is as dangerous before operation as after it. Certainly the emergency does not wait to begin just after operation, and I have seen valuable additional time lost after operation from the medical executive handling the surgical representative one of those "must bills" based on the theory that babies and children cannot stand starvation. My observation has been that babies and children stand simple starvation and simple dehydration as well as adults, and better than they stand food given them which they cannot digest. If they cannot stand starvation, why prolong it by giving food they cannot take care of? Babies and children should have the same postoperative handling that adults get, and with me that means starvation until I have every reason to believe that food can be handled properly by the digestive tract. Water is, of course, essential, but that does not mean enough to produce sheet erosion or gully washing.

Another myth is that babies and children do not stand opiates well. I have never seen one yet after abdominal operation that did not take to opium with enthusiasm and with resulting benefits.

Beyond calling your attention to the great value of X-ray in all three conditions, probably the best summary I can make to this paper is an apology for its hurried construction on short notice and with a subject assigned which I would not have chosen spontaneously unless with ample time to review and study the literature.

I am sure you will allow me some credit in connection with appendicitis for not insulting your intelligence by a reiteration of the old alliterative slogan of purgation, procrastination, and perforation. I am sure that only unavoidable, or at least excusable, error would lead any of us to use purgation in any of these conditions which, because of relative infrequency, can readily fail to be even thought of when the patient is first seen.

MEDICAL ECONOMICS AND THE SMALL TOWN DOCTOR*

M. D. ARNOLD, M.D., Cleveland

THE PROFESSION of medicine occupies a unique position among the professions and occupations of man. In support of this statement let me describe to you several imaginary pictures. Some of these pictures, we will suppose, are hanging on the wall to my left.

The first picture represents a bankrupt farmer. This farmer has no plow with which to till his soil and he has no money with which to buy a new plow. But he has come to the hardware merchant for help. Gentlemen, does public opinion look upon that situation as an emergency and does it demand of the hardware man that he supply this farmer's need free of charge? I think you will agree with it; it does not.

The next picture represents a hard-pressed, middle-class taxpayer with a large family to support and a small and inadequate salary. This man is badly in need of a new suit of clothes, but he can ill afford the price. However, he has come to the clothing store for help. Gentlemen, does public opinion look upon that situation as an emergency and does it demand of the clothing merchant that he supply this man's need free of charge? It does not.

The third picture represents the well-known Smith family, who, after getting themselves hopelessly into debt trying to keep up with the Joneses, have suddenly discovered that their bathroom commode is stopped up. And Mr. Smith, as you will see, has come to the plumber for help. Gentlemen, does public opinion look upon that situation as an emergency and does it demand of the plumber that he add his name to Mr. Smith's already long list of creditors? It does not.

The last picture on that wall represents

a jobless, penniless pauper who has no food in his cupboard with which to feed his wife and babies. He has come to the grocer for help. Gentlemen, does public opinion look upon that situation as an emergency? Yes, of course, it does. But does it demand of the grocer that he supply this man and his family with food free of charge? I think you will agree with me; it does not.

Now, gentlemen, why are these things as they are? Is it because of thoughtlessness on the part of public opinion? Is it due to lack of humanity or of an inherent sense of decency in the human race? No, it is not. Thoughtlessness and humanity and an inherent sense of decency have nothing whatever to do with it. It is simply because through the centuries the tradesman and the artisans of the world have been hard-headed, close-bargaining businessmen who have demanded pay for their commodities and remuneration for their services. It is because these tradesmen and these artisans have throughout the centuries instilled into the minds of the public no false ideas regarding any peculiar obligation they may be under to suffering and needy humanity by virtue of their high and noble callings.

Gentlemen, I know that you know what I am driving at and it is quite unnecessary for me to describe to you this other picture that hangs alone in all its touching but fallacious grandeur upon the opposite wall. But for the sake of argument I am going to describe it to you anyway. As you have doubtless already guessed it is a composite picture of the bankrupt farmer, the hard-pressed, middle-class taxpayer, the Smith family with all its false pride and the jobless, penniless pauper, all of whom have been suddenly laid low by serious illness. They are calling on the doctor for help. They are telling him an old, old story familiar to us all. They are telling him that

*Read before Five-County Medical Meeting at Cleveland, Tennessee, August 13, 1935.

his money is good. Gentlemen, does public opinion look upon this situation as an emergency and does it demand of the physician that he give his services to these people free of charge? You know and I know that it does.

And, gentlemen, why is this true? Is it because in situations of this sort there is a peculiar thoughtfulness on the part of public opinion? Is it because of humanity or of an inherent sense of decency in the race where situations of this sort are involved? Public opinion, of course, says yes, for public opinion is like many a weak and faltering person who has been so quietly and so gently boosted into a position of trust that he has actually come to believe he is due all the credit for his attainment. But I say no. Thoughtfulness and humanity and an inherent sense of decency have nothing whatever to do with it. It is simply because throughout the centuries the time-honored and highly-revered old family physician has, with his misguided sense of duty, been instilling into the minds of the public the false idea that he and he alone is under a peculiar obligation to serve suffering and needy humanity by virtue of his high and noble calling.

Gentlemen, has it cost us nothing to become doctors of medicine? Are the initial cost and the maintenance overhead of the practice of medicine so much less than those of other professions and businesses and occupations that we can afford to give a large part of our time and services free of charge?

The profession itself is apparently content to let things ride as they are. From the standpoint of the art and the science of medicine we are ever striving toward newer and better and more scientific and more effective methods, but in the matter of medical economics we have actually become notorious for our resistance to change.

But even though we will not take the initiative in trying to better our lot, we have our champions in this unfair situation. The unfortunate thing is they are all to be found

outside the ranks of the profession. We find them among newspapermen and writers for lay publications. We find them among philanthropists, professional reformers, politicians, communists, and among the great army of the unemployed who, having no business of their own to attend to, must dabble in the affairs of others. And, gentlemen, while we are either totally inert and silent or else bitterly and doggedly resistant to change they are vociferous in their clamorings for reform.

The question is, do we want this kind of champion? Is it possible that they can be entirely benevolent and unselfish and free from guile in their motives? And granting that they are so now, is it possible that, having accomplished their purpose, they will be content to step aside and leave the doctor to manage his own affairs? Is it possible they will be able to resist the temptation to profit by his toil? I am willing to believe that many of these schemers are honest in their intentions toward both the physician and his patient. But I warn you, gentlemen, that all of them, even the honest ones, believe that the physician is incapable of managing his own affairs and it is their avowed intention to take this management out of his hands and appropriate it unto themselves. And I warn you further that many of these reformers, far from being unselfish in their motives, actually contemplate standing between the physician and his patient and taking an unearned share of the profits of his practice just as the man on the wheat exchange stands between the farmer and the consumer and appropriates a share of the profits of trade.

Gentlemen, these are not idle words. It is well known that a definite movement for reform has long been on foot. Furthermore, our enemies, and such we must call them, are not trying to take us by surprise. While we have been confining our plaintive discussions to the cloistered halls of august medical assemblages, they have been blatantly spreading their propaganda far and

wide through the media of the newspapers, the magazines, and the radio. Not long ago I heard the tail end of a radio talk by a newspaperman in Chicago on this very subject. He boldly declared that state medicine in the United States is no longer a possible eventuality, but that it has become almost an established fact, witness the fact that President Roosevelt himself had recently expressed himself as being in favor of some form of government-controlled health insurance. This same man closed his remarks by warning the medical profession in tones that were almost gloating that they had better quit their senseless squabbling and string along with the reformers or they would find themselves in the unwelcome position of vanquished warriors forced to accept whatever terms their conquerors might see fit to impose upon them. Gentlemen, my voice is like the voice of a gentle mother warning her wayward child compared with the tones of that man.

What reason have we to believe that the systems of state medicine and of government-controlled health insurance that have spread like wildfire through the countries of Europe will not come to our fair shores? Has not our government already poked its nose into every other business in the land? And has it not already and with some measure of success tried to manage our affairs through the medium of the FERA and its subsidiary state organizations?

And gentlemen, I would warn you not to be lulled into a feeling of false security by the belief that our public whom we have served so long and so faithfully in birth, in sickness, and in death will rise to our defense. The America of today is not the America of fifty years ago nor of ten years ago and our public will submit to whatever system of state medicine is imposed upon it by the brain trusters at Washington. It is true that later they will rue the day they ever allowed this monster to invade their land, but then it may be too late to remedy the situation. Now is the appointed time for us to act.

Gentlemen, let me plead with you and through you with organized medicine throughout the land that we quit our sullen and dogged resistance to all change and that with eyes open and ears to the ground and minds alert we hold ourselves in readiness to seize our rightful place at the helm of whatever system of caring for the sick is to replace our present one. Nay, gentlemen, it will take more than that. If these outsiders are allowed to put their plans into operation we will never have a chance to gain control. We must formulate our plan, put it into effect, and sell it to the public before the government or any other lay organization has a chance to beat us to it.

I realize the subject of health insurance is a thorn in the side of every honest physician. I realize that for me to even appear in the light of defending it is to lay myself open to the charge of heresy and of treachery. And yet I honestly feel that something ought to be done and done quickly if we are to save ourselves and our patients from a real calamity. And, gentlemen, to quote Dr. J. Rollin French of Los Angeles, "Utilization of the insurance principle has long been recognized as the best possible budgetary method of meeting the costs of unpredictable hazards." Sickness is unquestionably one of the unpredictable hazards all men must accept in their lives. What right have we as physicians to contend that it is essentially different from fire and storm and death? We insure ourselves against suit for malpractice and we expect our brother in the profession of law to depend on that insurance for his fee. But we refuse to admit the right of our patients to insure themselves against sickness with its attendant physician's fee.

I do not want you to think that I advocate health insurance as a solution to our problems. After all, my sole purpose in mentioning it is but to try in my weak way to correct what seems to me to be a dangerous tendency on the part of the profession to assume the role of a mad bull glowering

and bellowing and pawing the ground before the red flag of socialized medicine. Would it not be far better to look upon socialized medicine as the bull, for such in truth it is, and while striving intelligently to prevent its getting loose, be at the same time planning how we shall take it by the horns in case it does get loose. Remember, please, that my plea to you and to organized medicine throughout the land is that we keep our eyes open and our ears to the ground and our minds alert, ready to seize our rightful place at the helm of whatever system of caring for the sick is to replace our present one. Remember, too, that while we are opposed by powerful forces in this fight, it is the people themselves who will in the end decide what they want. If they should decide in favor of a system of health insurance then that insurance must be our business and under our control, not under the control of the government or of any other lay organization.

Personally, I do not believe that health insurance is the correct solution to our problems. Property and earning capacity are not vital. Death is final. A decent burial is a luxury. But health is far too precious, its maintenance far too important, its recovery far too urgent to be intrusted to the doubtful mercies of any prepayment plan. And when such a plan comes under the control of the state insult is added to injury, for health then becomes subject to the vacillating whims of politics.

Now, gentlemen, in our role of mad bull we like to roar that socialized medicine is distinctly un-American in principle. Let's just calm down and indulge in a little mental house cleaning. Is our present system of dealing out health itself really so very American after all? The particular brand of national egotism that characterizes the American temperament is largely based on the rather dubious claim to business efficiency and progressiveness. If this be true, has our present system of treating the sick really earned its naturalization papers?

Are we as efficient as we might be? Are we as businesslike in conducting our practice as we should be?

The practice of medicine is a three-sided affair. It is an art, it is a science, and it is a business proposition. If in any medical practice any one or any two of these phases is emphasized to the neglect of the others that practice becomes an unbalanced and inefficient service. We are all familiar with the distinction that is made between the art and the science of medicine. Suffice it to say that both are essential to the successful and efficient handling of patients. Now, it does seem that in the rural and semirural communities there is a distinct tendency on the part of physicians to overemphasize the art of medicine and to neglect the scientific side whereas in the large cities and in the great medical centers the exact reverse seems to be the order of the day. It would appear that if country practice could be rendered a little more citified and city practice a little more countrified a very happy medium would be struck.

As regards the purely business side of the practice of medicine, this too can be and often is either overemphasized or neglected. Any honest business is a give-and-take affair. It presupposes that full value will be given for full value received. If a doctor so completely loses himself in the pure art and the pure science of medicine that he forgets to keep books and to send out and collect bills, then he cheats himself and his practice becomes an unbalanced and inefficient service. If, on the other hand, that doctor overemphasizes the art and neglects the science of medicine or vice versa and yet never fails to collect for a house call or an office visit, then he cheats his patient and his practice is still unbalanced and inefficient.

I take it that I am speaking to men who like myself are small town and country practitioners. We are not interested in trying to improve the methods of the city physician. We are interested in trying to

render our own practice more balanced and more efficient. How can we do this? By bringing the medical center to our patients instead of driving our patients to the medical center. I have a plan by which this might be accomplished. True, it is only a dream, but it does not seem to me to be an impractical dream. The plan, of course, is not new and it is only in its wider application that it needs an introduction. It has to do with reduction of overhead, elimination of expensive and wasteful duplication and reduplication of equipment, and otherwise increasing the efficiency of the service by centralization and consolidation of the facilities for administering medical care. It involves a more perfect rendering unto doctors the things that are doctors', unto nurses the things that are nurses', and unto the laity the things that are laity's.

I like to envisage a miniature medical center for each semirural county. By semirural counties I mean such counties as Roane, Loudon, Blount, Monroe, McMinn, and Bradley; counties which have at least one centrally located town of fair size and a not too remote and inaccessible countryside. Such a medical center should be owned, controlled, and operated by the medical and nursing professions of the county. Why should the state or the county or the Catholic Church or the Baptist Church or any lay organization own and control so much of the accessories of medical service? Such a medical center would consist of two buildings—a doctors' building and a nursing home. They would be connected by enclosed passages. These buildings need not be owned by the professions. They could be erected by private capital and leased, the one to the organized medical profession and the other to the organized nursing profession of the county. They need not be of the most expensive construction obtainable. I firmly believe that much of the recent depression was due to outward show and silly ostentation. One of the most efficient small town medical centers I have ever seen is housed in a frame building of low and ram-

bling architecture. It is located only about eighty miles from the great medical center of New Orleans. Surprisingly few people from that parish ever go to the city for treatment.

All the physicians of the county would have their offices in the doctors' building. There would be common reception rooms, common examining rooms, and common treatment rooms. By a system of alternating office hours this might even be extended to the use of consultation rooms in common. This would mean a great saving in office rental and equipment. The doctors would be thrown into closer contact with each other, there would be a more intimate comradeship and a freer exchange of ideas. Consultations would be easier and less expensive and thus patients could be given the benefit of them more often. An assembly room located in the building would solve the problem of where to hold medical meetings. Such meetings, instead of being the cut-and-dried affairs they are now, would more easily take on the character of dry clinics.

There could be a central medical library and reading room. This could be started by pooling the physicians' personal libraries and by pooling subscriptions to medical journals. Its maintenance and growth could be provided for by dividing the cost of new books and journals equally among all the physicians. The purchase of new books and journals could be decided upon by popular vote at medical meetings or on recommendation of a special library committee. Such an arrangement would greatly reduce the cost to the individual physician of keeping up with the times. At the same time it would encourage the giving of book reviews and would greatly facilitate the preparation of scientific papers.

There could be a more uniform system of keeping case records and this would greatly facilitate the gathering of valuable statistics.

Secretarial and nursing help could be

pooled by having one secretary serve a number of doctors and by having circulating nurses to go from one office to another as needed.

There could be a central business office run on a strictly business basis with a businessman or businesswoman in charge. At this office patients would be expected to make definite arrangements for paying for treatment and all collections would be handled through this office. Such an office would combine the functions of a social service, a credit bureau, and a collection agency. It would impart an atmosphere of business efficiency to the practice of medicine that would soon enable it to live down the rather haphazard methods that have so long obtained in the individual physician's office. Soon we would find that people would no more think of applying for medical service without expecting to pay for it than they would think of requesting a loan at the bank without expecting to pay interest or of ordering groceries without expecting to pay for them or having their cars overhauled without expecting to pay for that service. All physicians' fees and all laboratory, X-ray and operating room charges would be turned in at this office for collection. Proceeds from the accessories of health service, that is, from the laboratory, the X-ray equipment, the operating rooms, the supply of radium, and the physiotherapy equipment would be pooled, for they would be owned jointly by the organized profession. They could be applied to building rental and other operating expenses, thus relieving, to a large extent, the individual physician of a burdensome overhead.

There would be one large central laboratory, located in the doctors' building, owned by the profession as a whole and equipped to do all kinds of clinical and pathological determinations. Such an arrangement would render the profession independent of the cheap, but remote and unsatisfactory, service of the overworked state laboratory

and of the expensive and often equally remote service of private city laboratories. It would encourage the use of the more complicated laboratory diagnostic procedures by the small town practitioner. It would lend a more scientific atmosphere to small town medical practice. By giving patients the impression that their ailments were receiving more careful investigation at home it would stem the tide of migration of patients to the larger medical centers. In fact, we owe it to our home folks to do all in our power to save them the great expense of such migration. The increased volume of work done by the one laboratory would lower the cost of the individual tests.

There would be one first-class X-ray equipment complete in every detail for both diagnostic and therapeutic work. It, too, would be located in the doctors' building and owned jointly by the profession. Thus, while it would probably be more practical for one doctor to make it his business to become proficient in its use, every doctor would feel free to avail himself of its valuable service and to give his patients the benefit thereof. Here again it is idleness, not use, of equipment that is expensive and the greater volume of work done by the one X-ray department would lower the cost to the patient.

There could be an ample supply of radium owned jointly by the profession and available to all doctors.

There could be one physiotherapy department equipped with all the latest devices and available to all the doctors or operated by someone specially trained in this type of work.

There would be one set of operating rooms consisting of rooms for major and minor operations, E.E.N.T. operations, orthopedic and cystoscopic work and obstetrics, all fully equipped with special tables, instruments, and sterilizers. They, too, would be located in the doctors' building, for it is the doctors, not nurses, who would use them.

An outpatient clinic to care for the charity practice of the community might or might not be a desirable feature of the center. It would be located in the doctors' building and a rotating service could be agreed upon among the physicians.

The nursing home would be leased by the organized nursing profession of the commu-

nity who would be in business for themselves. It would be a much simpler affair than the present-day conception of a hospital. It would contain nothing but wards and private rooms, a diet kitchen, and the usual equipment for feeding and nursing patients. Here the nurses would preside in all their glory, subject, of course, to the doctor's orders.

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H. H. SHOULDERS, M.D., Editor and Secretary

APRIL, 1936

EDITORIAL

STATE BOARD OF HEALTH

Some years ago the Tennessee State Medical Association took steps which were intended to bring about cooperative effort between the organized medical profession and the Department of Health of the state.

It is not the purpose of this editorial to recount the steps that were taken and the events that took place in bringing about the transition or the change that has come about. It is now appropriate that attention be called to the fact that at the present time there is peace, harmony, and efficiency.

The State Board of Health is now composed of Dr. John M. Lee, Nashville, president; Dr. Oren A. Oliver, Nashville; Dr. L. F. Mitchell, Nashville; Dr. C. P. Fox, Greeneville; Dr. W. K. Vance, Jr., Bristol; Mrs. Ferdinand Powell, Johnson City; Dr. J. R. Thompson, Jackson; Dr. J. C. Ayres, Memphis; and Dr. E. M. Fuqua, Pulaski.

This board was faced with an enormous task. It has performed its duties well. The policies that have been formulated have been wise policies. On every side there is consultation between doctors and members of the Department of Health with the result that cooperative effort is accomplished and without which no health department can ever enjoy a full measure of success.

The profession should take some pride in these achievements and not only should we have pride in the achievements—we must also have resolution. We must have

the resolution to follow through in carrying out a wise public health program for the benefit of public health.

THE DEBATE ON THE SUBJECT OF STATE MEDICINE

In the December issue of the JOURNAL attention was called to the fact that the subject, "Resolved, That the several states should enact legislation providing for a system of complete medical service available to all citizens at public expense," is to be debated by high school debating teams throughout the United States. At that time it was not known definitely whether the high schools in the state of Tennessee would debate the question. It is now known that the subject is to be debated and that the debating teams have been formed in some schools and colleges.

The National University Extension Association Debate Committee announced this subject for debate in March, 1935.

It is now estimated that this proposition will be debated by some one hundred thousand debaters. The discussions will be heard by millions.

Those who are to debate the negative side of the issue are defending the position of organized medicine in the United States. It is, therefore, incumbent on the medical profession to see to it that these debaters are supplied with information which will enable them to make an intelligent defense.

The Bureau of Medical Economics of the American Medical Association has prepared an adequate amount of dependable literature on this subject. The headquarters office of the Tennessee State Medical Association has some literature. It is urgently necessary that the officers of county societies see to it that this literature gets in the hands of these debaters because in many instances these boys and girls do not know where to turn to find this material and many of our school libraries contain books which support the affirmative side of the issue.

News came to this office just a few days ago to the effect that one instructor in the state of Tennessee made statements calculated to lead students to believe that state

medicine is working well in Russia and Germany. Our job then is to see that these young minds are not misled by the propaganda put out by the foundations and groups that are sponsoring state medicine in America.

NEWS NOTES AND COMMENTS

Dr. Harold E. Paty announces the opening of offices for the practice of general medicine, Bennie-Dillon Building, Nashville.

Dr. G. B. Brown, of Jellico, is back in practice following his recent injury.

Three paragraphs from one of Dr. Jesse Hill's weekly letters are worthy of wide circulation so we pass them on:

"Your secretary has practiced medicine a quarter of a century, specializing on mental and nervous diseases for twenty years, and in his opinion the mentality of all other professions, as a whole, is far inferior to that of the men who make up the Knox County Medical Society. Just look around.

"Dr. Pope gave many good thoughts the other night. One that was very impressive, 'Let's understand each other, do away with factions, pull together, and have a home for social and scientific purposes.'

"Dr. Zemp in discussing Dr. Pope's paper said, 'The fellow you hate may be the best kind of a fellow and what you need to do is get better acquainted with him.'"

The following history will be of interest to all. We quote it from a letter recently received.

"As yet I have not noticed anything in the JOURNAL concerning the Five-County Medical Society. It began as the Tri-County Medical Society on March 1, 1928, with Putnam, White, and Overton Counties represented, but grew to the Four-County Medical Society the very next meeting, two months later, with representation from Cumberland County.

"May 21, 1931, Jackson County was voted into the organization, and we have been the Five-County Medical Society since then.

"We meet every two months, the second Thursday, and have a membership roster of about forty. The average attendance at our meetings is about twenty.

"The officers elected in our January meeting at Crossville were: President, J. T. Moore, Algood; vice-president, H. H. Taylor, Cookeville; secretary-treasurer, J. Bates Henderson, Crossville.

"At our January meeting we set up the scientific program until next time and turned our meeting over to a memorial service to Dr. W. C. Officer, a former president of our organization, who died suddenly December 24, 1935, at his home in Monterey.

"At that meeting a resolutions committee was appointed to draw up some resolutions regarding Dr. Officer to be sent to his family and the JOURNAL for consideration and possible publication. I enclose the resolutions.

"Thinking you may be interested in our little organization and hoping you may include us in the roster of intrastate societies, I am

Most sincerely yours,
(Signed) J. BATES HENDERSON,
Secretary-Treasurer."

WOMAN'S AUXILIARY

President-----Mrs. R. G. Reaves
Knoxville
President-Elect-----Mrs. Theodore Morford
Nashville
Press and Publicity-----Mrs. W. O. Floyd
Nashville

THE STATE CONVENTION

New plans and new inspirations may be gained from our State Convention in session at Memphis, April 14, 15, 16. Our service to the medical profession and to the citizens of our state will be enlarged by mutual consideration of our common problems. Let us give our best to the program of the auxiliary during the coming year.

DAVIDSON COUNTY

MRS. W. C. BILBRO, JR., *President*
On March 10, the Woman's Auxiliary to

the Davidson County Medical Society invited Dr. W. W. Bauer, of Chicago, to come to Nashville to give two lectures in the furtherance of public interest work. Dr. Bauer, the well-known author and speaker on matters pertaining to public health, is director of the Bureau of Health and Public Instruction of the American Medical Association; associate editor of *Hygeia*, the health magazine; member of the National Advisory Committee for the Summer Roundup of the Children of the National Congress of Parents and Teachers. He is also in charge of the American Medical Association's radio programs.

Dr. Bauer spoke at the morning assembly of the East Nashville High School. Over a thousand students listened eagerly to his entertaining and instructive lecture on "Popular Beliefs That Are Not So."

At noon the members of the local auxiliary had the privilege of meeting Dr. and Mrs. Bauer at luncheon at the Hermitage Hotel.

At 3:00 P.M. in the assembly room of the Hermitage Hotel, Dr. Bauer addressed the auxiliary and the public at large on the subject of "Health Education versus Health Racketeering." In this lecture Dr. Bauer spoke of the true as opposed to the false ways in which medical information is given to the public. Members of local women's clubs and other organizations had received special invitations to this important lecture. An open forum was conducted by Dr. Bauer at the conclusion of the address.

RUTHERFORD COUNTY

MRS. MATT MURFREE, *President*

The Woman's Auxiliary to the Rutherford County and Stones River Academy of Medicine entertained Friday with a buffet luncheon at the home of Mrs. J. A. Scott in honor of Mrs. Rogers Herbert, of Nashville, president of the Woman's Auxiliary to the American Medical Association, and the following members of the board: Mrs. Theodore Morford, president-elect; Mrs. B. F. Byrd, state historian; Mrs. T. G. Pollard, second vice-president; Mrs. W. C. Bilbro, Jr., state treasurer; Mrs. Y. W. Haley, Mrs. W. R. Cate, state directors; Mrs. W.

W. Wilkerson, Jr., chairman of archives; and Mrs. Oscar Nelson, all of Nashville.

Bowls of jonquils adorned the reception rooms and formed the centerpiece of the dining table which was covered with an Italian lace cloth. Mrs. Annie Youree and Mrs. T. J. Bratten presided at the table.

Mrs. Scott was assisted in receiving and serving by Mrs. Matt Murfree, Mrs. J. B. Black, Miss Angeline Smith, and Miss Virginia Taylor.

Mrs. Murfree, president, presided over the meeting which followed the luncheon. The business meeting was postponed and Mrs. Murfree introduced a violin solo, "Romance" (Weimosuski) by Virginia Taylor, and two vocal selections, beautifully rendered, by Donna Angeline Smith, "Thank God for a Garden" (Del Riego) and "By the Bend of the River" (Edwards), Mrs. Harry Gannaway, accompanist. Mrs. Murfree gave a very gracious introduction to Mrs. Herbert, the speaker of the occasion.

Mrs. Herbert's address was on "Public Relations." She defined the Woman's Auxiliary as the public relations department of the medical association, whose object is the promotion of health education as directed by the medical profession.

She spoke at length on her recent trip to the meeting of the A. M. A. Board in Chicago, and her visit to the organizations in northern and western states, giving a most interesting account of the auxiliary work that is being done in those states.

MEDICAL SOCIETIES

Campbell County:

The Campbell County Medical Society held its regular monthly meeting March 26 at the Peoples Bank in LaFollette. Those present were Drs. G. B. Brown, Stirl Rule, S. D. Queener, J. W. Presley, W. D. Gibson, J. P. Lindsey, Harry Hollingsworth, R. W. Lewis, R. J. Buckman. A paper was read by Dr. Rule on the "History, Incidence and Diagnosis of Syphilis." Discussion was opened by Dr. Presley.

Carter County:

The Carter County Medical Association held their regular monthly meeting March 16 at a six-thirty dinner at the home of Dr. E. L. Caudill.

Following the dinner Dr. H. B. Dameron read a very interesting paper. In the business session which followed members appointed Dr. E. T. Pearson as delegate to the State Medical Meeting which will convene at Memphis in April.

Davidson County:

March 17—"Lateral Sinus Thrombosis," by Dr. W. G. Kennon. To discuss: Dr. Eugene Orr.

March 24—"Ureteral Transplantation," by Dr. Henry L. Douglass. To discuss: Dr. L. W. Edwards.

Case Report: "Carcinoma of Penis," with presentation of case, Dr. Carl Crutchfield.

March 31—"Management of Pneumonia with Especial Reference to Typing and Specific Therapy," by Dr. Wm. R. Cate. To discuss: Dr. O. N. Bryan.

April 7—Dr. Richard E. Scammon, professor of anatomy, University of Minnesota, was the guest speaker. His subject was "The Guild of Medicine."

Dyer, Lake, and Crockett Counties:

Scientific program:

"Breech Presentations — Their Management and Delivery," Dr. R. C. Newkirk, Tiptonville.

"Pregnancy Complications of Third Trimester," Dr. W. W. Walker, Memphis.

"Immunization Problems," Dr. Ed Clay Mitchell, Memphis.

The State Maternal Welfare Committee is doing a splendid work. This society sincerely appreciates the cooperation and assistance in arranging this very instructive program.

C. L. DENTON, *Secretary*.

Giles County:

The Giles County Medical Society held its regular meeting Thursday, March 26, at the Citizens Bank Building, Dr. R. E. Warren, president, presiding. Besides regular business, an interesting talk was made by Dr.

C. B. Tucker, of Nashville, on "Communicable Diseases."

Hamilton County:

April 16—"Infections of the Hand," by Dr. J. A. Reynolds. "The Management of Renal Ptosis," by Dr. Jos. B. Killebrew.

April 23—"Surgery of the Gall Bladder and Bile Ducts," by Dr. H. Quigg Fletcher.

April 30—Symposium on Heart Diseases: 1. "The Diagnosis of Heart Disease," by Dr. Philip H. Levinson.

2. "Heart Disease in Childhood," by Dr. Harold J. Starr.

3. "Heart Disease in Pregnancy," by Dr. H. P. Hewitt.

4. "Heart Disease in Surgery," by Dr. A. M. Patterson.

5. "The Treatment of Heart Disease," by Dr. F. E. Marsh.

May 7—Dinner and Symposium on Tuberculosis at Pine Breeze Sanatorium:

1. "The Economic Phase of Tuberculosis and Development of Pine Breeze Sanatorium," by Dr. M. White.

2. "The Industrial Phase of Tuberculosis," by Dr. E. A. Gilbert.

3. "Tuberculosis in the South; Contributing Economic and Social Causes," by Dr. J. L. Hamilton.

May 14—"Facial Pain," by Dr. T. Lyles Davis. "X-ray in Dental Foci," by Dr. E. M. Delay.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

The Five-County Medical Society met in Waynesboro, March 31. The following papers were read:

"Report of Two Interesting Stomach Cases, with Case Histories, X-ray and Operative Findings," by Dr. Harlan Tucker, Nashville.

"A Plea for Closer Cooperation Between Physicians and Dentists," by W. O. Thomas, D.D.S., Savannah. Discussion opened by Dr. R. H. Black, Waynesboro.

"Life of Louis Pasteur," by Mrs. C. C. Stockard, Lawrenceburg.

Henry, Carroll, and Weakley Counties:

The Tri-County Medical Association held

a meeting at the Lynn Hotel in McKenzie, March 10.

A very interesting program was enjoyed by the physicians of Henry, Carroll, and Weakley Counties, including addresses by Dr. Duncan Eve., Jr., of Nashville, on "The Treatment of Compression Fractures of the Spine"; Dr. Horton Casparis, Nashville, on "The Mental Health of Children"; Dr. Hugh J. Morgan, Nashville, on "The Prophylactic and Remedial Treatment of Heart Failure"; and Dr. L. E. Burch, Nashville, on "Practical Points Pertaining to the Management of Common Female Ailments."

A very interesting feature was discovered when it was noticed that all the visiting doctors were over six feet in height.

The Tri-County Medical Society met March 31 at Hotel Lynn in McKenzie, a week earlier than the usual time, in order not to conflict with the state association which met April 14-16.

Dr. V. E. Massey, of Huntingdon, secretary of the society, arranged a program. The four papers were given by Memphis physicians. The program follows:

"Pyelitis of Pregnancy," by Dr. H. R. Turley.

"Diagnosis of Intestinal Obstructions," by Dr. Frank W. Smythe.

"Disease of the Eye," by Dr. J. B. Stanford.

"Modern Trends in Treatment of Lobar Pneumonia," by Dr. Conley Sanford.

Knox County:

March 10—Dr. H. L. Pope, "Business and Pleasure of General Practice." Drs. Rule, Raulston, and McCarter opened the discussion.

March 17—Dr. E. A. Guynes, "The Irregular Heart." Discussion opened by Dr. H. C. Long.

This was a special meeting to which each doctor was urged to bring his wife. Dentists and their wives were invited also.

March 24—Dr. Jack Chesney, "Nephritis in Children." Discussion opened by Drs. Eblen, Smith, and Cross.

March 31—Dr. C. F. Clayton, "Cancer of the Rectum." Discussion led by Drs. Abercrombie, Haun, and Waterhouse.

April 7—"Toxemia of Late Pregnancy," by Dr. E. G. Wood. Drs. Stone, Jenkins, and Andrew Smith led the discussion.

Maury County:

Meeting in regular session the Maury County Medical Society elected D. B. Andrews president; Dr. O. C. Fowler, of Spring Hill, first vice-president; Dr. H. C. Busby, of Columbia, second vice-president; Dr. C. D. Walton, of Mt. Pleasant, secretary and treasurer; and Dr. John Hart, of Columbia, censor.

Members of the society were greatly interested in the reading of a paper on "Erythema" written by Dr. E. M. Ragsdale.

Shelby County:

April 7—Case Reports: "Dysmenorrhea Treated by Presacral Sympathectomy," by Dr. W. T. Black.

"Rupture of Interventricular Septum," by Dr. N. S. Stern.

Papers: "Classification of Diseases in the Newborn," by Dr. A. G. Quinn. Discussion opened by Drs. W. D. Mims and Beulah Kittrell.

"Ante-partum Hemorrhage," by Dr. J. P. Long. Discussion opened by Dr. J. R. Reinberger and Dr. W. T. Pride.

Sullivan-Johnson Counties:

Papers by Dr. William Gammon, of Bristol, and Dr. Fred Duckwell, of Kingsport, featured the meeting of the Sullivan-Johnson County Medical Society, which was held at the General Shelby Hotel, March 4.

Dr. Gammon employed the use of motion pictures in illustrating his paper on "Vomiting in Infants and Children."

"Colles' Fracture" was the subject of Dr. Duckwell's paper, led by Dr. T. R. Bowers and Dr. T. B. Yancey. Discussion on the other topic was led by Dr. W. R. Rogers and Dr. George Leavell.

A business meeting preceded the program.

A meeting was held April 1. Dr. H. H. Westcott, of Roanoke, Virginia, delivered an address on "Orthopedics in General Practice."

A number of guest physicians were present from Johnson City, Elizabethton, Abing-

don, and Erwin, in addition to the full membership of the Sullivan-Johnson Society.

Sumner County:

The Sumner County Medical Society met March 4, with Dr. C. D. Giles, president, presiding.

The following committee was appointed to appear before the County Court of Sumner County to obtain an appropriation to care for the indigent sick of the county: Drs. Homer Reese, C. D. Robbins, L. M. Woodson, R. N. Buchanan, A. L. Absher, and J. M. Oliver.

The names of the following physicians will be placed before the county court for selection of two to serve on County Board of Health as required by act of legislature: Drs. W. N. Lackey, Homer Allen Reese, L. M. Woodson, and J. M. Oliver.

The following were named on the Maternal Welfare Committee: Drs. L. M. Woodson, W. N. Lackey, and I. H. Beasley.

The society will meet the first Wednesday night in each month at 7:30 o'clock in the directors' room of the First & Peoples National Bank. The president and secretary will serve as program committee.

Dr. John M. Lee, president of State Board of Health, of Nashville, and Dr. Milton Smith Lewis, of Nashville, will address the society at the next meeting.

Warren County:

Dr. John S. Harris was elected president of the Warren County Medical Association and the McMinnville Academy of Medicine at the regular meeting, March 6. Dr. E. L. Mooneyham, of Rock Island, vice-president, and Dr. John T. Mason, secretary and treasurer.

Interesting cases were reported and discussed at this meeting.

The Warren County Medical Society met in regular session on Friday night, April 3, at the Magness Memorial Building with seven members present.

The minutes of the previous meeting were read and approved and communications from the state association were read by the secretary.

After disposing of the business of the society, since no special paper was prepared for the meeting, a general discussion of cases by the various members was held.

It was decided that the next regular meeting, the first Friday night in May, would be held at the Sedberry Hotel and that two or more out-of-town doctors be invited to attend for a dinner and the meeting following.

Since no more business came up for the consideration of the society, it was adjourned in regular order by unanimous vote.

JOHN T. MASON, *Secy.*

OTHER MEDICAL SOCIETIES

West Tennessee Medical Society:

The next meeting will be held in Jackson, May 21.

Tennessee Valley Medical Association:

You are cordially invited to attend the second meeting of the Tennessee Valley Medical Association and Postgraduate Assembly in Knoxville, June 10, 11, 12. We hope you will be able to attend.

(Signed) DR. JESSE C. HILL,

Secretary, Medical Building, Knoxville.

VANDERBILT UNIVERSITY MEDICAL SOCIETY MARCH 6, 1936

1. Case Report: "Prostigmin in Myasthenia Gravis," Drs. S. S. Riven and M. F. Mason.

A white girl, age 20, was admitted to the hospital for the fifth time on December 21, 1935, because of progressive weakness, ptosis of eyelid, indistinct vision, inability to control muscles of eye, and difficulty in talking, chewing, and swallowing. Symptoms first appeared in February, 1932, lasted three months and entirely disappeared. She has had four such attacks, all occurring in winter. The physical examination revealed a languid expression of the face, ptosis of eyelids, facial weakness, weak smile and slow, somewhat slurred speech. The neurological changes were typical of myasthenia gravis. Fluoroscopic examina-

tion revealed a thymic tumor. Observations of the creatin-creatinine metabolism, on a creatin free diet before and after the administration of glycine, ephedrine, irradiation of the thymus, and prostigmin were described. Ergographic tracings before and after the administration of prostigmin were presented. The effect of prostigmin began fifteen minutes after injection, reaching its peak after thirty minutes, and disappeared at the end of three hours. The patient had been receiving this drug for ten weeks and was able to maintain normal nutrition and fair muscle power during this period.

Case discussed by Drs. Wells, Youmans, and Brooks.

2. "The Pneumatic (Rubber Jacket) System of Treating Extensive Wounds and Certain Other Conditions Involving the Peripheral Vascular Bed," Dr. Beverly Douglas.

In an article in the *Journal of Laboratory and Clinical Medicine*, Volume 9, 1923, referring to burns, I stated, "I first considered employing light local pressure interrupted by periods of relaxation as a means of exerting a tourniquet action on the capillaries, but the technical difficulties of applying inflatable rubber jackets or of immersing insulated patients in heavy solutions have made other methods (viz. the use of vasoconstrictor drugs) more valuable clinically. Light portable folding transparent rubber jackets with air seals for application to extremities were shown. End results were demonstrated following the use of jackets in November on a burn wound of the entire leg and thigh and two whole thickness skin grafts following the release of extensive burn contractures of the hand in which it supplanted the usual sea sponge for pressure. Many advantages of this system of treatment were emphasized. Therapeutically, the chief ones are greater convenience, comfort and economy, and absolute avoidance of secondary infection, while function of muscles and joints is preserved during healing.

SUMMARY

By its use the very atmosphere surrounding a wound, i. e., temperature, humidity, solution or gaseous content, positive and negative pressure, and light conditions may be varied at will while the wound is studied through the jacket under direct vision of the naked eye and the total exudate collected for study. Its use was suggested in other conditions involving the peripheral vascular bed according to the principles first described by the author in 1920.

Case discussed by Drs. Brooks and Burch.

3. "Intracellular Parasitism and the Cytotropism of Viruses," Dr. Ernest Goodpasture.

Certain contrasts between the pathogenesis of infections due to extracellular parasites and those due to obligate intracellular parasites are emphasized, and some of the phenomena of virus infections are correlated with those of the latter group. Implications which suggest definite lines for further investigations in the study of pathogenesis of virus diseases are pointed out. A better understanding of virus and obligate intracellular parasitic infections will require a different means of approach and a different background of experimental hypothesis, from those applied to the study of extracellular parasites. The present structure of bacteriology and immunology has been built upon a foundation of fact derived largely from studies of those infections which are due to parasites of the free fluid of the body. We must deal now with the agents which reproduce within the living cells of the host. This is a more difficult group to investigate and to understand, for it is a striking fact that the intracellular parasites and viruses, certainly for the most part, resist cultivation outside their natural environment. They must at present be approached indirectly. One must laboriously investigate all the varied phenomena of pathogenesis, and the protective and immunity responses of the host, contrasting these with the facts and hypotheses available from many years of research into the behavior of parasites and host in their struggle within the body fluid.

Paper discussed by Dr. Youmans.

The Five-County Medical Society:

The Five-County Medical Society met March 19, as guest of White County. Twenty members were present in addition to the following guests: Dr. Mooneyham, of Rock Island; Dr. Williamson, of Red Boiling Springs; and Dr. Carter, of near Crossville. Each guest made a short talk, complimenting the town and the society.

After a delicious steak dinner, the two papers, composing the scientific program, were presented. Dr. W. M. Johnson, of Sparta, read "Some Observations at the Mayo Clinic," which outlined the newest methods as practiced at the Mayo Clinic in management of various diseases. Dr. J. C. Blankenship, of Sparta, spoke on "The Acute Surgical Abdomen," which dealt with various symptoms indicating surgery and its best method of management. Both papers elicited good discussions and much interest from the members present.

Complimentary packages of medicine and cigars were presented by the Nelson Drug Company.

Cookeville was voted the meeting place for May, with Drs. Thurman and Z. L. Shipley as essayists.

The Five-County Medical Society is composed of White, Putnam, Overton, Cumberland, and Jackson Counties, and meets alternately in each county seat.

Middle Tennessee Medical Society:

Middle Tennessee Medical Society will meet at Shelbyville, May 21 and 22. Last fall it was voted to meet in Woodbury. Due to the fact that the schoolhouse in Woodbury has been destroyed by fire, it was necessary to change the meeting place.

The American Association for the Study and Control of Rheumatic Diseases is holding its fifth conference on rheumatic diseases at the Phillips Hotel, third floor, on May 11, at 9 o'clock, in Kansas City.

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			R. B. Gaston, Lebanon

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

An Estimate of the Usefulness of Avertin in Surgical Practice. Westley Bourne, Canadian Medical Association Journal, July, 1934.

The author states that his opinions and convictions about avertin are not of the transcendental kind, for the simple reason that they are susceptible to such positive proof as allows no adumbration of doubt. He also states that incontrovertible data have been published, and still there are those dissidents who will decry avertin. Because some patients have died following cholecystectomy, when avertin was used, is no reason that avertin should not be administered where there is hepatic disease. The fact is ignored that the mortality is high in cholecystectomy and the effects of avertin are not compared with those of other anesthetics on the liver.

The author mentions important actions of avertin as described by others such how it obtunds the nervous system, how respiration is depressed, how the circulation is influenced, how the blood becomes concentrated and less alkaline, and how the functions of the liver and kidney are somewhat impaired. However on these occasions the clinical and laboratory investigations have shown that avertin, in comparison with other anesthetics, may be regarded as practically safe and without contraindications, provided suitable doses are used.

Avertin is especially indicated if the patient is nervous and frightened as in Grave's disease. It is the anesthetic of choice in brain surgery as it does not cause swelling of the brain. It can be used repeatedly for the control of convulsions and for painful dressings without the patient developing a tolerance.

Avertin does not cause nausea and when it is necessary to use an inhalation anesthetic in addition, more oxygen can be used.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 316 Doctors Building, Nashville

Abscess of the Ovary. William T. Black, American Journal of Obstetrics and Gynecology, 31: 487-494, March, 1936.

This presentation consists of a study of 105 cases with suppurating ovaries which occurred in the Gynecological Service at the General Hospital and the Baptist Hospital of Memphis, Tennessee. Eighty suppurative ovaries occurred in 1366 opera-

tive cases of pelvic inflammatory disease, an incidence of six per cent. The author believes six per cent of operative pelvic inflammatory disease will have a suppuration of the ovary.

Difference in the etiology, bacteriology and pathology in the tubo-ovarian abscess from that found in pyo-ovarium are emphasized. It is possible that pyo-ovarium may be due to the gonococcus yet the tubes remain free and do not enter into the suppurative cavity. Although the ovary is an isolated organ, it is subjected to various types of bacterial invasion for the corpus luteum also offers a favorable medium for growth. It is the author's opinion "that the corpus luteum abscess is due to those conditions whereby the ovary is exposed to direct infection by contiguity of tissue and that all abscessed ovaries are not corpus luteum primarily as formerly taught."

In pyo-ovariums the streptococcus was responsible in ninety-five per cent of cases while in the tubo-ovarian abscess the neisserian organism was primarily responsible.

The author feels that a tubo-ovarian abscess and pyo-ovarium can be differentiated from other pelvic pathology and can even be differentiated as separate syndromes.

Surgery is the only curative treatment, but when to operate depends upon the experience and judgment of the surgeon (many oophoritis cases will clear up on conservative therapy.)

Pyo-ovarium without involvement of other internal generative organs requires no delay whereas, in patients presenting a tubo-ovarian abscess where the neisserian organism is responsible, a longer delay is permissible.

The Abuse of Cesarean Section. Edwin G. Langrock, New York State Journal of Medicine, 36: 383-387, March, 1936.

The maternal mortality from cesarean sections in the United States is frightfully high. It is at least from six to ten per cent and probably higher because of many individual deaths never reported. The main cause of this high maternal mortality rate is not to be found in a lack of skill on the part of the operator, nor in the fact that the operation is done too late in labor, nor in the fact that the membranes have been ruptured too long, nor is the fact that the patient was presumably infected. Granting, however, that all these may be contributing causes, cesarean section still has a high mortality rate even when done on the cleanest patient, by the most skilled operator at the optimum time. The main cause resides in the very nature of the procedure itself. The author shows that such an operation is necessarily hazardous and therefore the only way the number of deaths can be reduced is to perform fewer cesarean sections. He states there are patients being delivered by cesarean section for uterine inertia and cephalopelvic disproportion in whom there is really no reason whatsoever for doing this operation.

EXPLOITATION of the MEDICAL PROFESSION

EVERYWHERE it is rampant—newspapers, magazines, billboards, radio. "Your doctor will tell you that . . ." "Medical science has found that . . ." "The greatest specialists in Timbuctoo say that . . ." And the rest of the story is, of course, "Use our pills or our vitamins three times a day; ask your doctor."

♦ ♦ ♦

You are forced to compete with those who offer your patients free advice regarding medical treatment. You deliver Mrs. Blank's baby today, and tomorrow she will receive by mail samples of baby foods with complete directions how to use them. Indeed, some physician representing a commercial organization and knowing that the case is in your hands may address a personal letter to your patient offering his services free.

♦ ♦ ♦

It has been said that ten more years of the present trend of interference in medical practice will do away with the need for private practice of infant feeding and other branches of medicine.

♦ ♦ ♦

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♦ ♦ ♦

So long as medical men tacitly encourage the present trend, so long will serious inroads continue to be made into private medical practice. When more physicians specify MEAD'S Products* when indicated, more babies will be fed by physicians because Mead Johnson & Company earnestly cooperate with the medical profession along strictly ethical lines and never exploit the medical profession.



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An indication for cesarean section exists when during labor major disproportion between passenger and passage is present. It again is indicated when, during labor, due to a combination of factors, it becomes evident that a cesarean section would be safer than a delivery from below. These two indications are relatively rare, but they are the ones in which most mistakes are made. They are the ones that are most abused even by men whose intentions are honest.

The conclusion that major disproportion exists can frequently be arrived at only after a full test of labor, by the latter the author means full dilatation of the cervix for about two hours with the membranes ruptured. When a patient is in labor especially a primipara, the attendant should relegate the thought of cesarean section to the remotest corner of his mind, for he will then give her a real test of labor; whereas with cesarean section uppermost in his thoughts, knowing that the longer the labor is allowed to progress the more dangerous the cesarean section becomes, he cuts the test of labor short. It is frequently too late to do a cesarean section, but seldom too late to deliver safely from below.

The writer suggests solid conservative treatment and encourages intelligent, watchful expectancy in labor.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.

Doctors Building, Nashville

The Role of Vitamins in Ophthalmology. H. Viallefont and E. Diacono, *American Journal of Ophthalmology*, March, 1936.

Vitamins A and C are the most important from an ophthalmic viewpoint. Avitaminosis-A reveals itself as conjunctival xerosis or keratomalacia and hemeralopia. Hemeralopia may not be accompanied by any objective sign, but may reveal itself as a constriction of the visual field for green and especially for red. But biomicroscopy will often reveal early changes in the corneal epithelium. Under the name of paravitaminosis the authors group certain manifestations which are cured or relieved by vitamin therapy. Torpid trophic keratitis, phlyctenular keratoconjunctivitis, and other slowly healing corneal lesions have yielded to local vitamin-A therapy.

Vitamin C has been less well studied. Lack of it produces scurvy not associated with ocular disturbance. But the authors believe that recurrent hemorrhages in the vitreous may be ascribed to lack of vitamin C in the diet. The role of vitamin C in the production of cataract has not yet been satisfactorily explained.

SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.

1400 Monroe Avenue, Memphis

Transfusions of Cadaver Blood. S. S. Yudin, Moscow, *Journal A. M. A.*, March 21, 1936.

The author first used cadaver blood for transfusion following the successful experiments of V. N. Shamov on dogs, and similar experiments by his assistants. It was demonstrated that cadaver blood preserved its living properties in the blood vessels of dogs from six to eight hours when the cadavers were kept at a temperature of one to two degrees above zero (centigrade).

In forty-nine clinical cases cadaver blood did not exhibit any toxic effect. It is possible to keep the blood in a citrate solution for as long as four weeks. Blood from persons dying in an attack of angina pectoris or those killed by an electric current or by hanging is more suitable. From two to three and five-tenths liters can be obtained from each cadaver. As to the technique, the cadaver is placed in the Trendelenburg position and a glass canula to which a rubber tube is attached is inserted into each end of a severed jugular vein. The blood is allowed to run into a five hundred cc. flask. The flask is stoppered and placed in the refrigerator.

Further research showed that the coagulation of the blood and the further behavior of the coagulum depended on the cause of death and in the duration of the ante-mortem agency. Blood of healthy persons dying suddenly rapidly coagulated if removed a few hours after death. The coagulated blood however returned, in from one-half to one and one-half hours, to the fluid state and would not coagulate again. This fibrinolysis takes place because of the gradual disappearance of the fibrinogen. Also individuals dying slowly have an abnormally high sugar content while the blood of those dying after prolonged agony showed normal amounts. This sugar comes from the hepatic veins.

The practical advantages of the phenomenon of fibrinolysis are first, that one can tell the fitness of the blood by observing its behavior with regard to coagulation even before necropsy is performed and, secondly, that this blood can be preserved without the aid of an anticoagulant. The citrate blood gives twenty per cent of mild reactions while that without citrate gives about five per cent. When the blood is given to the patient it is warmed to body temperature and filtered and is given by the gravity method after the introduction of some physiologic sodium chloride solution. A biologic test with from ten to thirty cc. is obligatory in every case.

There were no toxic manifestations in a series of almost 1,000 transfusions of cadaver blood. In this series there were fatalities in two cases due

to faulty grouping and incompatible blood, one due to air embolism, one due to anaerobic infection at the site of venesection and in three cases hemolysis was present.

This procedure is very useful where frequent transfusions are given. Such a transfusion may be given during a prolonged laparotomy or in the course of a brain operation or when there is any emergency with profound shock.

The author favors organization of stations for collection of fresh cadaver blood. The supply could come from traffic accidents and from the medical service where deaths from coronary thrombosis and angina pectoris are not rare.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.

By G. A. WILLIAMSON, JR., M.D.

Medical Building, Knoxville

Primary Tuberculosis of the Penis. J. A. Lazarus, A. A. Rosenthal, *Jour. Urology*. March, 1936.

Primary tuberculosis constitutes the rarest type of chronic ulceration which may occur on the penis. The disease is frequently mistaken for primary or tertiary syphilis, chancroid, granuloma inguinale, cancer, chronic balanitis, leprosy, or herpes progenitalis. It is not related to tuberculosis involving other parts of the urinary tract, but results from direct inoculation of the tubercle bacilli into the skin of the penis. In adults, the disease usually occurs as a result of contact with a tuber-

culous cervix during coitus or during the common type of perversion when the penis is brought into contact with tuberculous sputum. In children the infection usually results from circumcisions, especially is this true of the Jewish race.

The disease is comparatively rare, occurring only two times in a series of 342 cases of urogenital tuberculosis reported by these authors. However, it should be kept in mind in making a diagnosis of chronic lesions of the penis.

The lesion usually first appears as a small painful papule on the glans penis, resembling somewhat the papular form of chancre. As it grows, it assumes the appearance of a typical chancroid, is of a reddish color, ulcerated, feels and looks indurated, and is sensitive to touch. The lesion has a great tendency to become undermined and extend into the urethra, and the shaft, of the penis. The inguinal lymph nodes become more or less involved as the disease progresses.

The diagnosis is usually made late in the course of the disease after all types of therapy have proved futile. A true diagnosis can be made only by biopsy, the finding of tubercle bacilli in the lesion, or by animal inoculation.

The prognosis of this disease is bad in children, the child usually dying within a year after the onset. In adults the prognosis is relatively good.

The treatment consists of curettage and excision of the affected tissue, while the ulceration is still local, amputation of the penis where the lesion is extensive. This is supplemented by a regime usually followed in the treatment of generalized tuberculosis.

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PAST AND PRESENT*

J. B. STEELE, M.D., Chattanooga, President, Tennessee State Medical Association

TONIGHT this speaker feels very much like the immortal David Crockett felt when he made his first speech in Congress. The opening paragraph of Crockett's maiden speech reads: "Mr. Speaker, I am skeered, but I don't know what about. I know I can lick any man in this house, and I ain't afeared of none of 'em; still I'm skeered."

Some foolish man in the prehistoric days inaugurated the custom of requiring every president to make what is known as "The President's Address." You, ladies and gentlemen, must have a speech of some kind, and I must make that speech.

It is becoming that my first word on this occasion should be one of appreciation and gratitude. Formal words are always inadequate to express the deepest feeling. Let the sincerity of this simple acknowledgment atone for all it lacks in grace.

Not the least difficult thing about a president's address is the choosing of a theme. I have determined to call my feeble effort "Past and Present." I wish to refer to some of the rugged individual practitioners who have made such a glorious record of sacrifice and accomplishment for the Tennessee medical profession in the past. And I hope to show that, in the Volunteer State, where the medical profession has such a past history, there is little danger at present

of the individual practitioner being superseded by the system that is called "State Medicine."

PAST

As Tennesseans and as members of this organization of Tennessee physicians and surgeons, we may well pause a little while to recall the splendid men who blazed the trail for us in the years long past—those brave men who served the people of their period, without tools, as we think of our delicate instruments, without anesthetics, for anesthetics had not yet been dreamed of, almost without medicine save for simple herbs internally applied and even simpler outward applications.

Probably the earliest recorded instance of any surgical treatment in Tennessee is a case of bloodletting, which has an amusing angle. In the early days bleeding was the great resort for all illness, from broken bones and strained muscles to aching molars and ears. If the surgeons were brave, their patients were even braver, since the patients submitted to the heroic treatment of "letting" their blood at the dictates of physicians who were sustained by the optimistic belief that the patient *might* recover, and if he died, he probably would have died anyway. Evidently at that time, every gentleman must have known something of that form of surgery. Certainly, the Duc d'Orleans, who was Tennessee's first royal visitor and who later became King Louis Philippe of France, was familiar with the procedure. When he paused near South

*Presidential address delivered before the Tennessee State Medical Association, Memphis, April 14, 1936.

West Point, now Rockwood, en route from Knoxville to Nashville, he became ill and had a fever. He bled himself and recovered. John Watts, chief of the Cherokees, very soon after suffered with a fever and asked for the same treatment. The young prince—he was about twenty years of age—let the chief's blood and, strange to say, the chief recovered, or thought he did, which was the same thing. Immediately he announced that he would bestow a reward upon the prince—the greatest any man could have and one that no white man had enjoyed before. The prince should have the privilege of sleeping between the chief's grandmother and great-aunt in the chief's own wigwam. The Cherokees honored their old people and particularly the old women of the tribe, and this gesture was a very serious token of regard—a Cherokee Congressional Medal of Honor, so to speak. The king of the French mentioned it in his memoirs of his American travels, and years later, when he received an American minister who happened to be from Tennessee, his majesty asked if it were still the custom in Tennessee to reward young men for noble deeds by letting them sleep between the chief's grandmother and great-aunt in a very smoky wigwam.

We hear very little of the surgeons who accompanied the Revolutionary armies, but there is one name that was well known in the early days in the North Carolina-Tennessee country. That is the name of Dr. Patrick Vance. While Dr. Thomas Walker, a Virginian, was the first medical man to visit what is now Tennessee, Dr. Vance is credited with being the first physician to settle in Tennessee. He was with the Colonel William Christian expedition against the Cherokees. Afterwards he moved to Tennessee to make his home and is believed to be the first of Tennessee's physicians and surgeons. He left an interesting record of the first operation in Tennessee. This manuscript is a part of the Draper collection found in the State Historical Society of Wisconsin at Madison. The story is so interesting that I am taking the liberty of reading it to you exactly as it appears in the Draper manuscript:

FROM THE MEDICAL AND PHYSICAL JOURNAL, 1806; PART II, VOL. II

"Remarks on the management of the scalped head by W. James Robertson of Nashville, in the State of Tennessee. Communicated to the editor by Felix Robertson, M.D., of the same place.

"In the year 1777, there was a Doctor Vance, about the Long Islands of Holston, who was there attending on the different garrisons, which were embodied on the then frontiers of Holston, to guard the inhabitants against the depredations of the Cherokee Indians. This Doctor Vance came from Augusta County, in Virginia. In March of the same year, Frederick Calvit was badly wounded, and nearly the whole of his head skinned. Doctor Vance was sent for, and stayed several days with him. The skullbone was quite naked, and began to turn black in places, and, as Doctor Vance was about to leave Calvit, he directed me, as I was stationed in the same fort with him, to bore his skull as it got black, and he bore a few holes himself to show the manner of doing it. I have found that a flat-pointed straight awl is the best instrument to bore with, as the skull is thick and somewhat difficult to penetrate. When the awl is nearly through, the instrument should be borne more lightly upon. The time to quit boring is when a reddish fluid appears on the point of the awl. I bore, at first, about one inch apart, and as the flesh appears to rise in these holes, I bore a number more between the first. The flesh will rise considerably above the skull, and sometimes raise a black scale from it, about the thickness of common writing paper. It is well to assist in getting off the scales of bone with the awl. These scales are often as large as a dollar and sometimes even twice as large.

"It will take at least two weeks from the time of boring for it to scale. When the scale is taken off, at the proper time, all beneath it will appear fleshy, like what we call proud-flesh, and as if there was no bone under it.

"The awl may, at this time, and, indeed, for a considerable length of time, be forced through the flesh to the bones without the

patient's feeling it; but after any part has united to that portion of the scalp, which has remaining original skin, it becomes immediately sensible to the touch.

"The scalped head cures very slowly, and if this kind of flesh rise, in places, higher than common, touch it with blue-stone water, dress it once or twice a day, putting a coat of lint over it every time you dress it, with a narrow plaister of ointment.

"It skins remarkably slow, generally taking two years to cure up.

"In the year 1781, David Hood was shot at this place with several balls and two scalps were taken off his head, and these took off nearly all the skin which had hair on it. I attended him, bored his skull, and removed from almost the whole of his head such black scales as I have described above. It was three or four years before his head skinned over entirely; but he is now living and is well.

"In 1780, Richard Lancaster and Joel Staines were both wounded, scalped, and left for dead. These persons were under my direction, and their heads were bored as above described. They both got well in the course of two years.

"M. Baldwin, and some others, were scalped either in 1790 or 1791. Their skulls I also bored, or directed it to be done. They all recovered.

"I never knew one that was scalped, and bored as above directed, that did not perfectly recover. There is always part of the scalped head over which but little or no hair afterwards grows.

"In 1769, I saw a young man in South Carolina who had been scalped eight years before that time, and about twice the size of a dollar of the bone of his head was then perfectly bare, dry, and black. I am persuaded, that had his skull, even then, been bored, he might have recovered of the wound, which put an end to his life about a year after I saw him, the naked portion of the bone having rotted, or mortified, and exposed the substance of his brain, a very considerable quantity of which issued out at the opening at his death.

"Nashville, April 10, 1806."

Before that discovery of Dr. Vance's in

1776 and as late as 1788, there were no doctors in Tennessee. To quote an historian of the period: "The doctors were youth, and health, robust constitutions, and a strong inheritance from sturdy fathers and mothers." Also, there were almost no old people among the pioneers which helped a lot!

The one dreaded disease was smallpox. Tuberculosis was almost unknown.

In 1799, Dr. Chester was Governor John Sevier's family physician in Jonesboro. Dr. Chester eked out his meager medical fees by keeping an apothecary shop. Governor Sevier also mentions a Dr. Fronier of Knoxville.

Dr. James Cozby was in the Battle of Kings Mountain. He was a close friend of John Sevier, and was respected and loved in three counties, Knox, Rhea, and Hamilton. He is buried in Hamilton County. He is mentioned ten times in Ramsey's *Annals of Tennessee*.

Some West Tennessee doctors of the early days, 1830 to 1840, were Dr. Nelson Hess in Dyer County and Dr. John H. Crisp in Trenton. Brownsville boasted six doctors: Barbee, Whitelaw, Johnston, Charles Boyd, Robert Boyd, and J. C. Jones. In Covington, the first doctor was Charles G. Fisher. In Obion County the first doctor was Samuel Teator. Dr. Joseph C. Strong of Knoxville was the preceptor of Dr. J. G. M. Ramsey, who was a great physician but an even greater historian. He left to us the story of Tennessee, and without his immortal work we would know little of our Volunteer State.

In Chattanooga, the first physician was Dr. Milo Smith.

Of early medical works Tennessee has a rather notable record when we consider that in 1830, when first volumes were published in Knoxville and Madisonville, much of our state was still the Cherokee Nation and unsettled by white people. Dr. Ramsey left no medical work, but Dr. Isaac Wright published "Wright's Family Medicine or System of Domestic Practice." Dr. John C. Gunn published "Gunn's Domestic Medicine" in Madisonville in 1832. Dr. Thomas A. Anderson wrote the "Practical Monitor

for the Preservation of Health and the Prevention of Disease."

Few of us in these days of microscopes, X-ray machines, blood pressure instruments, salvarsan, radium, and insulin can realize or visualize the difficulties that beset the surgeons of the South when the War Between the States devastated this country. Tennessee was the special arena of war with hundreds of battles, engagements, and skirmishes. No amount of patriotism and lofty sacrifice could equip physicians and nurses and hospitals. There is nothing that can take the place of training of troops and officers in the mechanics of sanitation and nutrition. The professional men who left their little village homes to join the Confederate army were themselves in many cases graduates of medical schools in Baltimore and Philadelphia and Louisville and were for their period expert and able. They were fine and conscientious, but they could not leaven the thousands of equally patriotic boys and young men who knew nothing of sanitation, and they could not even instruct helpers in sufficient numbers. In the execution of their duties, their part was to deal with the stern actualities of a vast array of diseases, ghastly wounds, and desperate problems of sanitation on an immense scale.

Medicines, instruments, provisions, and delicacies for the sick and wounded, and even medical books were contraband of war, regardless of whether intended for the Southern soldiers or the sick and wounded Northern prisoners.

Northern prisoners in Southern prisons from first to last numbered 270,000. This does not include the thousands who were captured and immediately released as the Confederate commanders realized the hopelessness of taking care of them. There were 220,000 Southern men in Northern prisons, a preponderance of fifty thousand in the South. Appeals to the United States Government to exchange them, to take them without exchange, appeals for food, for medicines, for anesthetics, for instruments, with the promise that such food, medicines, and anesthetics would be used for the Northern prisoners alone, were refused. The Federal commanders fully appreciated that

the prisoners provided a serious difficulty for the South, an insurmountable handicap. They could not be left to starve and they could be fed and cared for only with the most arduous sacrifice. In other words, while the South was forced to feed and administer medical aid, even though it was of the simplest character, to 270,000 prisoners, just that many Southern soldiers were deprived of food and medical aid. The Federal prisoners in the Southern prisons were therefore used by the Federal military strategist as a weapon of war. The horrors of Andersonville and Libby were not the fault of the South. Lest you think this statement unauthorized or even exaggerated, I will tell you that the "War of the Rebellion," containing the official documents and letters of the war (unedited), gives five statements of General Grant to this effect. He said: "To exchange prisoners now would endanger the safety of my army in front of Petersburg. It would defeat Sherman in his march to the sea. It is hard on our boys in prison but it is a mercy to the men on the firing line. So do not exchange. Under no circumstances will I consent to the exchange of prisoners or mitigate their misery."

Secretary Stanton said: "The less able the South is to bear the burden of the sick ones the greater is her responsibility for their care and the greater the odium for not providing for them. No, no medicine!"

When Secretary Stanton made this statement, there was not an ounce of quinine, a dram of morphine, or a grain of calomel in the South.

Despite the lack of supplies and food, blankets, cots, and clothing, despite the excess of prisoners in the South, despite the disadvantages under which the Confederate surgeons and physicians labored and performed their miracles of service, the Southern surgeons saved a much larger per cent of the wounded and sick than were saved in the Federal prisons. All the advantages of resources and numbers of doctors were with the Federals, even the advantage of space, because we know that the Southern prisons were crowded beyond capacity and that there was no material to enlarge the make-

shift hospitals, nor men to do the work if there had been material.

The papers containing the medical and surgical history of the Confederacy were destroyed by the fire in the office of the surgeon general in Richmond when the capital fell April 1, 1865. It is known, however, that there were 1,000 surgeons and 2,000 assistants. The nucleus of the group was formed when twenty-seven surgeons resigned from the Federal army to enter the Confederate States service. One of these was Dr. Samuel P. Moore. President Davis immediately appointed him surgeon general.

One of the outstanding surgeons in Tennessee during the Civil War days was Dr. Samuel H. Stout. He organized the Gordon Hospital in Nashville, and by 1863 had organized hospitals in Chattanooga along improved lines. These were taken over by the incoming Federal forces and used as General Stout left them when the Confederate forces abandoned the city. His title was Medical Director of the Hospitals of Tennessee.

Some Nashville hero surgeons were Dr. John S. Cain, Dr. J. D. Plunkett, Dr. J. Deering Roberts, and Dr. William Walker.

Dr. Watson Meredith Gentry of Franklin was a distinguished surgeon. His was one of the early appointments by Governor Harris, June 14, 1861. He was in nine major battles.

Another distinguished doctor of Civil War days was Dr. David Wendell Yandell. He was born near Murfreesboro. It is interesting to know that his grandfather, Wilson Yandell, was a doctor, and his father, Lunsford Pitts Yandell, was a doctor. Lunsford Yandell was a founder of the Medical Department of the University of Louisville where many of the Confederate surgeons had received their degrees. David Wilson Yandell was medical director of the Department of the West and in 1871 he was elected president of the American Medical Association. Other distinguished Tennessee physicians who have been elected to this high honor are Dr. Paul F. Eve, Dr. William King Bowling, Dr. William T. Briggs, Dr.

John A. Witherspoon, and Dr. W. D. Haggard.

In Chattanooga, a group of physicians who did heroic service included Dr. Lapsley Yandell Green, Dr. Joseph Strong Gillespie, Dr. P. D. Sims, and Dr. Milo Smith.

It is not possible to mention all the saintly men who served the South in those trying days of sixty-one to sixty-five, or even a fair fraction of the Tennesseans. These few names will prick your memory and you will recall others who lived in your section of our Volunteer State. Their names should be listed in our archives. Perhaps, with your approval, I shall appoint a committee to investigate their record and preserve their names:

The knightliest of a knightly race
That since the days of old
Have kept the lamps of chivalry
Alight in hearts of gold.

Our hearts should be the golden treasury
of their names and deeds.

PRESENT

Please do not give me the "gong," as I have a few words to say regarding "State Medicine."

The people of the United States are fortunate in many respects. They are particularly to be envied for the very excellent morbidity and mortality record which they have enjoyed. In the United States the workingman loses approximately one week a year due to illness, and this loss of time has not increased in the last twenty-five years. Our general death rate is 10.7 deaths for each thousand persons living, and the mortality of children under one year of age is fifty.

As evidence of the fact that the physicians of this country have shown every cooperation, not only in the treatment of the disease and the relief of suffering, but in the prevention of disease, diphtheria deaths in eighty-eight representative cities have decreased from 9.2 for each one hundred thousand of population in 1928 to 2.3 in 1933, and for the entire country the rate is only 3.9. The medical profession of the United States should be extremely proud of this record, and agencies interested par-

ticularly with the relief of human suffering should point to this achievement with pride.

But, unfortunately, certain idealists are ever ready to disregard the lessons of experience and formulate beautiful sounding but ineffectual theories. Thus it happens that certain organizations have decided that one of the most effectual professional systems which this country enjoys should be replaced by a state department which they believe will be more effective than the present system.

This theory was promulgated in the face of adverse experience in the use of similar methods by other peoples. A compulsory form of insurance closely akin to state medicine has been used in England and Germany for some years; and it would be well worth while to compare health conditions in these countries with our own favorable position. As compared with our mortality of 10.7, the German people experience a mortality of 11.2, the English people 12.3, the infant death rates being seventy-six and sixty-three respectively. As previously stated, the time lost from work due to illness by our workers has not increased in the past twenty-five years, yet in Germany, under the Compulsory Insurance Act, days lost have increased threefold, and in England the average time lost during the year is slightly over twelve days. Diphtheria deaths in a comparative group of citizens in these countries have remained about eight per thousand since 1928, which, of course, compares very unfavorably with our experience of 2.3. Experience in Russia, which has truly a state medicine of the form recommended for this country, should deter even the boldest from suggesting a similar plan for the United States. Admittedly the state authorities in that country have licensed and used improperly-trained persons as physicians. The crowded dispensaries with long waiting periods would certainly never be accepted by the medium income group in this country, which this scheme is supposed to particularly benefit.

The effectiveness of a medical service depends chiefly on four factors—availability, personnel, relation between patient and physician, and equipment. It might be of

interest to see why state medicine cannot furnish these prime requisites. Certainly, obtaining a physician in an emergency through a government bureau cannot be as easy as directly contacting the physician, and attendance at a government clinic with the necessary and unnecessary red tape and waiting cannot be as satisfactory as our present system. How many individuals could you find who are better satisfied with their relations with the Collector of Internal Revenue or other government agencies than their relations with physicians?

State medicine has failed to provide a more efficient personnel for several reasons. First, when the system is begun, only those physicians who are not successful practitioners are willing to work for the state with its limited emoluments, the loss of independence and its advancement necessarily depending upon winning the approval of the superior officers and not upon their success as practitioners. It is quite obvious that the selection of the superior officers will be political in nature, as has always been true of governmental appointments, and will remain the same unless, as suggested in "Men in White," all politicians are operated on for the removal of their acquisitive instincts. So much for the original selection of the physicians. Following the original selection, if such a system prevails, it is inconceivable that a physician would expend the necessary time and money to fit himself for the profession with such limited opportunities. Most certainly the calibre of the entrants into medicine would be distinctly lowered.

The relation between the physician and patient is of prime importance. State medicine must necessarily almost abolish this relationship which is to be cherished and is quite a factor in the management of a patient. It is conceivable that, if disease could be removed from the individual, mass production principles might be successful. But as all men will agree, the patient himself must be considered in all instances, and in some must be given even more consideration than the disease itself. Retaining this relationship under a state regime is impossible for several reasons. First, the free

choice of the attending physician is denied the individual. Regardless of various schemes which proposed to make this possible, it has never functioned in this respect. Certainly the government at the present time does not allow this among its enlisted army and navy, postal employees, or employees on various other governmental projects who are under the care of a limited number of physicians appointed for this purpose. Applying the mass production principle to medicine makes it necessary that the individual physician see large numbers of patients, and does not make it possible for him to give sufficient time to each individual. Physicians in England working under the Panel system have found this to be true. In Russia, the crowded clinics well illustrate this unfavorable factor.

It is conceivable that under a state regime various instruments of precision and laboratory facilities might be more generally available. However, as we all know, these things are adjuncts to the successful practice of medicine and must be intelligently applied. When available in large quantities, it is probable that the average individual would obtain a few necessary and many useless laboratory procedures which he cannot obtain at the present time without some sacrifice. But it must be remembered that the sacrifice under state medicine would be compulsory not only for the useful but the useless tests. In discussing a problem of this kind, the effect upon the health of the community must be given first consideration, but recently there has been a lot of discussion as to the cost of medical care. Comparison with the amount of money expended for luxuries and semi-luxuries illustrates definitely that the cost of medical care is not excessive. We spend four times as much for tobacco and tobacco products as we do for physicians' fees and twice as much for cosmetics, cosmeticians, and the like to beautify our exteriors as we pay the physician to preserve a well-ordered interior. Despite the fact that the government has never been able to manage anything economically, the proponents of this plan feel that they will be able to economi-

cally manage state medicine. Even if the first consideration could be satisfied under a state regime of medicine, this must be paid for. It will prove expensive, and, as is always the case, the average man will be taxed both directly and indirectly to bear the cost of a scheme which will provide for the poor certainly no better service than they are now obtaining; a less satisfactory service for the man of means at less expense; and for the poor average man a very unsatisfactory type of medicine at a greatly increased cost.

It is inconceivable that thinking members of the society could be so misled as to permit destruction of the system of medicine which has been responsible for the most favorable health of any people anywhere. In addition to the care of the general health, this country is doing a large part of the world's constructive research. In former years, post-graduate centers were in European countries, but the medical center which attracts medical students from all parts of the world is now the United States. This situation is largely due to the efforts of our own medical profession as it now exists and has existed for many years in the past.

Rugged individualism has played an important part in the development of the United States, not only in the medical profession, but also in other phases of our national life. It has always played a particularly important part in Tennessee. One of the most outstanding rugged individualists who ever lived was a Tennessean named Andrew Jackson. The characteristic is one to be cultivated. It is entitled to the credit for the development of our states. While that development is not complete, yet, by comparison with other countries, our people are well blessed despite economic ills. The individualists of the medical profession have brought us to the enviable position we occupy today. They have, from the earliest days, given unstintingly of their time and energies to protect the health of our people. An important part of this protection is the education of our patients in health matters. It is no less our duty to educate them concerning the menace of state medicine.

TUBERCULIN THERAPY IN OCULAR TUBERCULOSIS*

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SO MUCH has been written on the subject of ocular tuberculosis and the treatment of this condition that one hesitates to discuss the subject further. Yet, on the other hand, it is evident that there is still little unanimity of opinion, not only with regard to the treatment of *ocular* tuberculosis, but also to some degree concerning the treatment of tubercular lesions elsewhere in the body. Generally speaking, the use of tuberculin at the present time is looked upon more favorably by the ophthalmologist than by the internist, though even among ophthalmologists there is still considerable diversity of opinion. In the light of these facts, it seems justified to consider that the question is not yet closed.

Three years ago the writer was given charge of all cases of ocular tuberculosis coming to the Department of Ophthalmology of the Washington University Medical School, at first as ophthalmological consultant to the internist giving the treatments, and later taking entire supervision. When first assigned to this duty, I was very skeptical about the value of tuberculin therapy, but since that time have come to feel that it has a definite place in the treatment of certain cases and that with proper control the dangers of this type of medication can be largely eliminated. It is still my opinion that nothing can take the place of rest, proper food, and freedom from worry, but how can such ideal situations be created, especially among the class of patients who are most frequently affected by tuberculous lesions? It would seem, however, that even under such Utopian circumstances, the proper use of tuberculin may be a valuable adjunct, and that where such conditions are impossible of attainment because of the social situation of the patient, the use of tuberculin is even more definitely indicated.

In order to understand the rationale governing the use of tuberculin therapy in

ocular tuberculosis, it is necessary to have some understanding of the nature and mode of attack of tuberculosis in the body. Koch discovered some forty years ago that an animal receiving its first injection of the tubercle bacilli reacted in a different manner from one receiving a second dose. Suker and Cushman (1) state: "This is the basis of immunological approach to tuberculosis and has been made the basis of study of the immunity reaction as well." In other words, when tubercle bacilli are introduced into a noninfected animal a certain immunity towards these bacilli is produced, but at the same time in their destruction a tuberculo-protein is liberated, to which the body becomes sensitized. Von Pirquet first gave to this phenomena the name of "allergy." In the words of Zinsser (2): "As a tentative point of view, we have put forward the conception that bacterial allergy is a hypersensitiveness to the somatic protein antigens of the bacteria in which the cells (of the body) become sensitized by the liberation of an unchanged protein bacterial substance liberated in the lesions." In an exceedingly interesting and thorough study of allergy and immunity in tuberculosis, Rich and McCordock (3) state that "allergy may be defined as that condition of sensitization to tuberculo-protein indicated by extensive damage and death of cells and more extensive acute inflammation following the liberation of tuberculo-protein in the body than in the normal individual, that is, the infected body becomes changed in some manner which renders the relatively bland protein of the tubercle bacillus capable of acting upon its tissues as a powerful irritant and poison. In the case of the tubercle bacillus we are dealing with an organism which, as is well known, has a little power to cause necrosis in the unsensitized body; but, when allergic hypersensitiveness has been acquired the products of the bacillus in minute concentration can destroy tissue readily."

Two questions arise: In the first place, is it possible to dissociate immunity and

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allergy from one another, and in the second place, is this allergic reaction of benefit to the body in destroying the living tubercle bacillus and thus aiding immunity? Rich and McCordock are of the opinion that allergy and immunity can be dissociated. They feel certain that a high degree of allergy may exist in different individuals which exhibit very different degrees of acquired resistance. For instance, an animal inoculated with dead bacilli develops an allergic hypersensitiveness similar in extent and reaction to that of an animal inoculated with living bacilli, but the immunity developed in the first instance is far less than that developed in the second. On the other hand, they quote Willis (4) as stating that two and one-half years after an immunizing inoculation with human bacilli of low virulence, guinea pigs had practically lost their allergy, but showed as high a degree of immunity to fresh inoculations of living bacilli as animals that were highly allergic. Friedenwald (5) has demonstrated that almost complete desensitization can be obtained in guinea pigs by subjecting them to gradually increasing injections of tuberculin up to 1,500 to 2,000 milligrams, an amount equal in man to about 180 to 240 cubic centimeters of undiluted tuberculin, and that this immunity can be maintained only by continuing such doses daily. It should be mentioned that it was found possible to acquire a somewhat less complete desensitization by the repeated injection of similar amounts of glycerine broth cultures. The immunity to the inoculation of virulent tubercle bacilli in these practically desensitized animals was then tested against that of a group of animals inoculated by a single injection of a virulent living tubercle bacilli, known as the R 1 controls, and also against that of a third group of normal guinea pigs. The investigation proceeded along three different lines: First, the mortality of the infection; second, the degree of dissemination of tuberculosis in the viscera; and, third, the progress of the lesion at the site of inoculation. With regard to the first two, the mortality due to tuberculosis in the desensitized guinea pigs and that in the R 1 controls was found to be about equal, only a few dying of widely disseminated

tuberculosis within three months, while almost all the normal controls died in from four to seven weeks. With regard to the visceral lesions, those in the desensitized animals were somewhat less than in the R 1 controls and far less than those in the normal guinea pigs. From these two criteria, it appeared to be demonstrated that the loss of allergy was not associated with any loss of immunity; rather that to a slight extent, the contrary appeared to be true. In order to study the allergic reaction and the progress of the lesion at the site of injection, living bacilli were injected directly into the anterior chamber of the eye. It was found that caseation and complete destruction tended to occur in the eyes of normal animals in from three to five weeks, in the R 1 controls from six to twelve weeks was required for caseation, while in the eyes of desensitized animals there was shown even less tendency toward destruction. No initial allergic reaction was shown by the first group, very definite and destructive reaction by the second group, and none by the third, except following massive injections. The reaction seen in the R 1 controls was an acute fibrinous iridocyclitis resembling the clinical picture of tuberculous keratoiritis, as seen in human beings. The author concludes that these latter experiments substantiate the previous statement that the loss of allergy does not appear to be associated with loss of immunity and that "the rationale for the use of tuberculin in treating tuberculous infection is, therefore, the production of perifocal desensitization rather than perifocal allergic reaction."

The tubercle may be considered as the typical reaction of the normal body to the tubercle bacilli even though exudative inflammation may take place, dependent upon the number and location of the invading organisms. It has been contended that the walling off of the bacilli by connective tissue is the usual method by which the body destroys the tubercle bacillus, and that most tubercular lesions of the body heal by the production of fibrosis about these lesions. Rich and McCordock state that the usual explanation of the beneficial effects of tuberculin treatment has been that the introduction of tuberculin into the body

causes inflammatory reactions about the tuberculous foci and that these reactions in some way help to destroy the bacilli contained in the lesions and also to stimulate fibrosis. They are of the opinion that this contention is unwarranted, as shown by the fact that the formation of connective tissue about a tuberculous focus always proceeds under unfavorable local conditions in the allergic body, as the toxins liberated in the allergic body tend to destroy connective tissue as fast as it is formed. They state, therefore, that "it is our belief that any beneficial effect which may follow treatment with tuberculin is less referable to perifocal inflammation than to desensitization and will occur only in those cases in which desensitization of a proper degree has been accomplished." They are, however, unwilling to take the position that the allergic reaction is of no benefit in the body's struggle against invasion by the tubercle bacillus. Zinsser announces his position in this regard in the following terms: ". . . We are inclined to believe that bacterial allergy represents a hair-trigger response of the tissues to the substances liberated from bacterial lesions, and though in its immediate manifestation it may do actual injury and give rise to clinical disease, its eventual significance is in the direction of protection."

The formation of tubercles is in no wise confined to tuberculosis. It is the most primitive reaction to an invading organism below the level where a vascular response can take place. To quote again from Rich and McCordock, "Tubercle formation is incited by the lipoid extracted from the bacillus, but this lipoid cannot evoke an allergic reaction. For that tuberculo-protein is necessary. This latter substance calls forth the allergic inflammatory reaction, but never causes the formation of tubercles." If lipoid is liberated in the allergic body, tubercles are formed more rapidly than in the nonallergic one, as allergy incites a more rapid migration of cells to the site of the attack. But, on the other hand, as previously noted, the walling off of these lesions by connective tissue proceeds under a considerable disadvantage in the presence of such allergy.

In the light of these considerations, let us turn to the problem from the standpoint of the ophthalmologist: How do the lesions of ocular tuberculosis differ from those of general tuberculosis and why should tuberculin be indicated in one and not the other? In this connection, it must be remembered that the ocular lesions almost always occur in the allergic body. They are secondary to some previous, usually quiescent, lesion elsewhere. In many instances these eye lesions are purely indications of allergic reaction; in others, definite tubercle formation is seen and occasionally tubercle bacilli can be demonstrated. In the former group, it is obvious that a process of desensitization, using extreme care to avoid overstimulation, should be of benefit in allaying the allergic reaction. In the second group, it is obvious that, owing to the nature of the tissues involved and the great damage that even microscopic increase in lesions so located can produce, it is important to reduce the destructive inflammatory allergic reaction about the previously formed tubercles as much as possible, in order to expedite localizing and walling off of the diseased areas. Aside from these considerations dictated by the nature of the ocular tissues and the delicacy of the structures involved, the minuteness of the disturbance must be taken into consideration. Nowhere else in the body would lesions comparable in size to those in the eye give rise to recognizable symptoms. We have seen that probably the beneficial value of tuberculin lies in its ability to cause a gradual reduction in the allergic reaction. Now in cases showing a massive infection with rise of temperature, it has been noted that there occurs a diminution of allergy, a desensitization process due to the combining of most of the available antibody by the large amounts of antigen liberated into the blood stream. Tuberculin is, therefore, not indicated in these cases, as the antigens from the broken-down bacilli are combining with the antibodies and the more liberation of antigen the more intense the reaction, so that the introduction of more tuberculin, to quote from Beulah Cushman (6), would only increase the intensity of the reaction and is, therefore, contraindicated.

The diagnosis of tuberculosis rests upon physical examination, X-ray studies, the clinical course of the disease, blood differential counts, and the reaction to tuberculin. It is especially with these two latter methods of diagnosis that this discussion is concerned. Many forms of tuberculin are in use at the present time, all of them of more or less equal value. Among these might be mentioned old tuberculin, new tuberculin, Koch, tuberculin filtrate, bouillon filtrate or Denys's tuberculin, and tebeprotein (Tonnesson). Each one has its special advocates. The original old tuberculin, developed by Koch, is an amber-colored liquid, an old glycerine broth culture of the tubercle bacillus of the human type, boiled and concentrated, from which the bacilli have been removed by filtration. It is very stable, but varies somewhat in potency. It must, therefore, be standardized as to strength such that ten milligrams shall be the minimum lethal dose for a 250-gram allergic guinea pig. It is well known that numerous sources of error creep into the preparation and preservation of the serial dilutions of old tuberculin used in therapy. In the weakest of these any variation in the strength of the concentrated solution is magnified something like one hundred million times. This lack of accuracy was brought to our attention upon one occasion when four mild focal reactions were induced by the use of freshly prepared solutions. Undoubtedly, similar accidents in the hands of other clinicians account for the long list of products of this nature which have been recommended.

There has recently appeared another product known as P.P.D., Purified Protein Derivative, a standardized tuberculin for uniformity in diagnosis and epidemiology (7). This tuberculin has been developed in the laboratory of Esmond R. Lou, Florence B. Seibert, and Joseph D. Aronson. Its originators postulate that standard tuberculin must fit the requirements of specificity, high potency, constancy in action, stability, and nonsensitizing character. They state with regard to old tuberculin that "it is possible to make highly potent preparations of old tuberculin, and in a concentrated form these preparations keep indefinitely. There is little argument about

the specificity of its action, at least in small doses, nor is there any evidence in spite of repeated and varied investigations that it itself sensitizes." However, there can be no assurance that different preparations are of the same strength. There are many sources of error; for instance, different strains of tubercle bacilli, or even the same strains under different environmental conditions, may produce different amounts of the active principle of tuberculin. Furthermore, the specificity of reactions secured with old tuberculin is somewhat interfered with by the considerable quantity of foreign and inert material contained in it such as glycerol extracts, salts, etc.

F. B. Seibert (8) has shown in a long series of investigations that it is possible to isolate the active principle as it exists in old tuberculin. This active principle is a protein derivative of relatively low molecular weight, which, when purified, fulfills the requisites for a standard tuberculin. It is more practical, however, to isolate it from old tuberculin made from cultures grown on synthetic media of known chemical composition. A dry powder results from the process, which analysis shows to be a product of a protein nature of small molecular weight, as compared with whole protein, free from all original culture medium constituents and all metabolites of bacillary growth, except a trace of nucleic acid. It passes into aqueous solution readily with the aid of a small amount of sodium hydrate which is neutralized without precipitation of the substance. This product can be used in solutions of accurately weighed amounts, or it can be incorporated with a soluble, inert substance like lactose and made into dry tablets, in which form no deterioration can take place. These tablets contain such an amount that when dissolved in appropriate solution 1/10 cubic centimeter delivers the required dose, obviating the mathematical calculations involved in the dilution of old tuberculin. Unused dissolved material is discarded at the end of the day. H. K. Mulford and Parke, Davis and Company, in connection with the Committee on Medical Research, are cooperating in the production of this purified protein derivative, and continuous check is maintained by clinical trial in the Henry

Phipps Institute. This committee has endorsed the name "Tuberculin P. P. D."

The dosage of purified protein derivative for diagnosis is considerably less than that of old tuberculin. It is used intradermally. The initial dose of 0.00002 milligrams is equivalent to 0.01 milligrams O.T. The second and last dose, 0.005 milligrams, equals 1 milligram O.T. The severity of the local reactions is likely to be greater with P.P.D. than with O.T. It was found, however, that when the above ratio of dosage was maintained, the same patients reacted positively and the same negatively to both products.

There is little question as to the value of some form of tuberculin in diagnosis. There is, however, not infrequently some difficulty in interpreting the reaction. Our method, and that usually employed where possible, is to inject about one minim of tuberculin of the proper strength intradermally, using as a control a similar amount of normal saline containing one-half of one per cent phenol. The site of injection is watched for the next seventy-eight hours for any sign of reaction, the temperature is taken, if possible, at frequent intervals and the focal lesion in the eye is kept under close observation. It has proven very difficult to carry out the second of these procedures. Our patients are almost all from the Out-Patient Department and, with very few exceptions, cannot be trusted to make anything like correct records of their temperature curves. Unfortunately, it has been impracticable to hospitalize all of them during the diagnostic period. In overcoming this difficulty, the Schilling blood differential count can be of very great value, but it should be understood that *real* experience is necessary for the proper interpretation of the blood differential count and that more harm than good may result from improper examinations.

Before entering into a discussion of the advantages to be derived from the use of the Schilling blood count, let us review briefly the salient points of interest with regard to this test. It was early shown that the blood picture was of considerable importance in tuberculosis. Lymphocytosis and eosinophilia were seen to be of good prognostic import, while neutrophilic hy-

perleucocytosis indicated an unfavorable outcome. The Ehrlich differential count was soon found inadequate. The Arneth classification was, therefore, introduced, but was found exceedingly time consuming and liable to many variable interpretations. Professor Victor Schilling of the University of Berlin therefore modified the Arneth classification and gave up that which now goes by his name. Reducing this method to its essentials, we should notice that the polymorphonuclear leucocytes are divided, first, into unsegmented, or mononuclear neutrophils, and second, into segmented forms. The mononuclears are subdivided into jugendliche and stabkernige cells. By a "shift to the left" is meant an increase of any of the neutrophils with unsegmented nuclei at the expense of the segmented forms. If the increase lies mostly among the jugendliche forms the evidence is of regenerative, while if among the stabkernige, of degenerative blood changes. The usual blood picture in tuberculosis is a degenerative one, with a shift to the left due to increase in the stabkernige cells, later with increase in the severity of the infection going into the regenerative phase. In cases that are doing well the lymphocytes remain normal, or increase in number.

J. F. Bredeck (9), who has followed this blood differential work with great enthusiasm, has given an elaborate summary and classification of the various stages of tuberculosis and the blood picture to be expected in each stage. At the same time, he warns us that a diagnosis of tuberculosis cannot be made by the blood picture alone, as other inflammatory conditions may also cause a similar shift to the left. He states, in conclusion of his latest paper, referred to above, that ". . . the Schilling count is a more accurate measure of *induced* focal reactions than are fever, general tuberculin reactions, physical signs or X-ray, and that a classification of the various stages of activity, as well as those of healing, can best be made by the Schilling count, together with the subcutaneous tuberculin test." For diagnosis, Bredeck recommends that blood smears be made just before and twenty-four and forty-eight hours after injection. He claims that by means of the blood pictures thus taken the allergy of the patient can

be so accurately determined as to make it possible “. . . to eliminate the smaller doses and in many instances to start with ten milligrams of old tuberculin as the initial dose.” In a personal conversation with the author of this paper, he recommended as an initial dose an injection one-tenth the size of that diagnostic dose giving the first positive reaction. He also called attention to his conviction that the effect of tuberculin is cumulative, and that the unfortunate reactions occasionally seen are often the result of too rapid repetition of the injections, and that the interval between doses should be determined by the length of time required for the differential count to return to normal after the initial shift to the left.

Our own cases number fifty-two in all. In these have been included only those patients who were considered to have shown sufficiently definite evidence that the ocular lesion was tuberculous, to justify proceeding with tuberculin treatment. Many others subjected to diagnostic tests have been eliminated as probably *not* tuberculous. It appeared to the writer that more information could be derived from the study of these patients as a group, rather than from the review of a large number of individual case records, wherefore this method has been followed.

There were thirty-one colored and twenty-one white patients, nineteen males and thirty-three females. In age they varied from fourteen to seventy years. As a rule, all were well nourished, not overworked, and most of them, recently at least, wholly or partially on government relief. The living conditions in practically all suspected cases were investigated and found satisfactory. None would admit to insufficient or improper food. Possibly these circumstances account for the extremely low rate of mortality, only one death having occurred in this group. In that instance the fatal termination was due to pulmonary tuberculosis. The lesions most frequently encountered were the various forms of keratitis. There were twenty-four such cases in all. Of these nine were diagnosed as sclerosing keratitis, five as interstitial, six as phlyctenular, and one as dendritic keratitis, while four were undifferentiated.

The number of patients in this group would have been considerably greater had not cases of phlyctenular keratitis in children been referred to the Department of Pediatrics. Next most numerous were the cases of iritis, of which the total number was sixteen. Only three of these showed typical tubercular lesions, two definite Koeppe nodules, and one miliary tubercles. This latter case was that previously mentioned as accounting for the solitary fatality. There were thirteen cases of marked vitreous opacity. Nine showed various chorio-retinal lesions. Seven developed cataracts; of these, three have been operated on. In all of them the convalescence was uneventful and the outcome satisfactory. There have been eight secondary glaucomas. The results in the three operated upon for this condition have been far less satisfactory; in only one case has any real improvement taken place. The less severe unoperated ones have, however, progressed in a more satisfactory manner. Chest plates have been made in only sixteen. This number has been restricted because of financial limitations. Of these, five only have shown definite signs of healed pulmonary tuberculosis, and one of those of active pulmonary lesions. This latter case was not treated more than a few days with tuberculin and died some months later.

Twenty patients can be said to have shown definite signs of improvement, while quite a number have been held stationary. There has been only one permanently damaging focal reaction. The loss of vision in this instance was due to a recurrent retinal hemorrhage, which quite possibly should not be attributed to the tuberculin treatment. It is of some interest, especially considering the large number of colored patients, that the Wassermann or Kahn reaction has been positive in only eight of the entire group.

The extremely small number of focal reactions is undoubtedly due to the rather conservative method of treatment and the small dosage employed. It has been our practice to start all cases on 0.000001 milligrams O.T., increasing with varying degrees of rapidity, dependent upon the reaction to the intradermal test injections, the acuteness of the inflammation and the

site of the lesion. In those cases involving the retina and choroid, especially in the macular region, the dosage has been advanced only with the greatest caution. In no instance has the increase been more than three-tenths of the preceding dose and, as a rule, has been only one-fifth of the foregoing injection. In the first year of my conduct of the clinic, the maximum dose rarely exceeded one milligram given once a week, though previously some of the cases included in this report had been given five milligrams once a week. It has been customary to treat these patients twice a week until a dosage of one milligram has been reached and then to hold the dosage at that amount, continuing the injections until a total period of about eight months has passed. Recently this upper limit has been somewhat increased. Rest periods have varied from one to several months, after which treatment has again been instituted, starting once more with rather small dosage. It has been quite remarkable that during these three years exceedingly few relapses have taken place, certainly not more than five in all. A number of these patients have not done well. The failure, however, has been a steadily downward course, rather than a sudden recurrence of the same or similar lesions.

The dosages employed by Dr. Bredeck have been referred to above, and while they may seem heroic, I should hesitate to condemn them, especially when controlled by blood differential counts, made and interpreted by an expert. But lacking expert supervision, such treatment would undoubtedly give rise to many severe and unjustifiable complications.

That no chain is stronger than its weakest link is a well-known proverb. The weakest link in our chain of evidence appears to lie in the matter of diagnosis. Some of the difficulties in diagnosis which we have encountered have been referred to previously. As a result, it has been necessary in many instances to accept as positive evidence of a tubercular etiology a suggestive case history, with failure to improve following the use of other methods of treatment, along with the elimination of other possible focal

or constitutional etiological factors in conjunction with a positive local or focal reaction to tuberculin. Considering these factors, and the subsequent reaction of the patient to tuberculin therapy and to general constitutional supervision, it would appear that we are justified in accepting only thirty of these cases as quite definitely proven to be of tubercular origin. The other twenty-two leave considerable room for doubt. It should be noted that all those showing positive Wassermann or Kahn reactions have been placed in this latter group.

A consideration of this group leads one to draw certain conclusions. In the first place, it is evident that the arrival at a definite diagnosis of tuberculous disease of the eye is attendant with great difficulty and, in the second place, that the evaluation of the benefit derived from any type of treatment in the majority of cases is open to considerable question. In the third place, it should not be lost sight of that the comparative safety of treatment such as herein outlined seems quite well established, and finally, it is impossible not to be impressed by the very definite improvement shown by quite a number previously uninfluenced by other treatment. The results obtained in this latter group certainly justify every effort that can be made to clarify and improve the methods of diagnosis and therapy of ocular tuberculosis by tuberculin and all other forms of treatment.

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TENNESSEE'S STATE HEALTH PROGRAM*

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THE ENACTMENT of legislation in January, 1935, creating the State Board of Health was perhaps one of the most progressive movements in the public health program of Tennessee during recent years. This legislative action confirmed executive action by which the same group now serving as our Board of Health was appointed some six months earlier. It has been a pleasure to serve as executive secretary of the board almost since the day of its inception. To me, the board's action has reflected constructive group thinking in which the interest of everyone has been approached and considered in a progressive and nonpartisan manner. Differences of opinion, which in reality were a lack of understanding, soon disappeared, as the board studied and approved with few changes the general policies and program of the department. The proof of this statement lies in the mutual understanding so quickly established between the Board of Health and the State Health Department.

The legislation, passed in July, 1935, creating county boards of health, has also done much to clear up possible local controversial points. The medical and dental professions are now represented on the county boards of health. They play a very vital part in carrying out the general health program; therefore they should have some responsibility in formulating and developing that program. However at this time unusual caution must be exercised to see that any major changes of policy are brought about through educational efforts instead of unpopular and imprudent local board action.

Now is the time of all times for the public health worker and the private practitioner, we of the organized medical profession, to present a solid and united front in combatting the subtle influences that are fostering impending changes in the practice

of medicine. We must be prepared to guide and direct whatever may come along lines of ethical public health and medical practice. It is just another illustration of unity being essential to survival, for, if divided, we will become engulfed in a reform wave of social and economic hysteria and have imposed upon us an unwanted, illogical, and most unsatisfactory situation.

The ideal of preventive medicine has been described as "the application of all our knowledge of preventive medicine to the life of every citizen in such a way as to make a larger, healthier, and happier life for the individual and community," or, in a few words, a better adjustment of man to his environment. Public health and preventive medicine are synonymous in their objective since each deals with the improvement of conditions, environmental and physical, that affect the social, economic, and industrial structure of our commonwealth.

We must and do recognize that although a public health program deals with the technical and scientific details of the discovery, control, and prevention of preventable diseases, with major emphasis being placed on health education, it can be most effective only when carried out in full cooperation with its progenitor—the organized ethical medical practitioners. The private physician is the backbone of any successful public health program. He must recognize his responsibility and be prepared to assume it.

Financial provisions must be made for the State Health Department as well as for other departments of the state government. There can be no economy where the "saving of dollars" comes before the protection and saving of human lives. The economical expenditure of funds for public health purposes is largely dependent upon our knowledge of actual problems and the factors contributing to these problems and their possible solution, our understanding of the state and local needs for public health protection, the degree and manner in which preventive measures are applied to meet

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state and local needs and the ability of the state and local health agencies to evaluate, promote, and stabilize effective administrative and technical practice. In brief, we must be able to utilize all available resources and apply our knowledge to useful ends.

Among the general functions of a state health department are the following:

1. The promulgation and enforcement on a state-wide basis of uniform public health regulations that have been approved by the State Board of Health. In Tennessee much responsibility for the enforcement of these regulations is delegated to the county boards of health. The wisdom of having medical representation on both the state and county boards of health is unquestioned. If state rules and regulations are promulgated by a medical board it logically follows that they can be most successfully applied locally by a similarly constituted group and that enforcement should be through active leadership instead of police power.

2. The study and control of preventable diseases, with emphasis being placed on prevention rather than cure. The following constitute major problems:

Tuberculosis takes an average annual toll of 2,500 lives which means there are at least 25,000 active cases in the state each year. The single diagnostic unit as now maintained, and accepting for examination only those patients referred in writing by the family physician, cannot begin to meet the demands for consultant assistance. Minimum requirements would be one diagnostic unit for each grand division of the state. These units give no information to the patients, but instruct them to go to their family physician who will be sent a complete written report of the clinician's findings and who will interpret the examination findings and prescribe treatment indicated. More concerted effort must be directed toward the family group of all positive cases. Collapse therapy, pneumothorax, seemingly offers the best chance of recovery for the early case and assuredly the most effective means of making a closed case of an open one. Perhaps an increase of case-finding

facilities and an intensive early diagnosis campaign with some plan to train local physicians in collapse therapy, utilizing local hospital facilities wherever conditions permit, offer more promise than any other program at this time.

Diphtheria takes an average of slightly more than 200 lives a year with more than eighty per cent of that number being five years of age or under. Immunization offers the only hope of effective control. If the family physician observes a harmful defect in a child he has no hesitancy about suggesting corrective treatment to the parents. There should be no violation of medical ethics if he determines the immunization status of every child in a family clientele and urges immediate protective measures. This should constitute recognized family service. The State Health Department will have diphtheria toxoid available for distribution without cost to all physicians within the next ninety days. A system for notifying parents, urging diphtheria immunization for all children at six months of age by the family physician, will become effective at the same time toxoid is made available. There can be no denial that this work must be done. We want the doctors of Tennessee to do it. The State Health Department will provide the material and notify parents. Can we be of further assistance in getting the work done by private physicians?

Syphilis must be handled as any other communicable disease if progress is to be made in its control. Cases of diphtheria and scarlet fever are quarantined. Why shouldn't an infectious case of syphilis be handled the same way? An effective control program must have as its objectives the more thorough investigation and control of all cases and an improvement of diagnostic and treatment facilities with particular emphasis being placed upon adequate treatment. We hope to reestablish within the near future in cooperation with local governments the cooperating clinician program which enables the physician to secure treatment material for those patients otherwise unable to get it. Such a plan insures the patient of getting adequate

treatment, but most important of all, he remains under care of the private physician. There is an unlimited opportunity for an educational program in venereal disease control. People are being tactfully told about body odors, halitosis, and athlete's foot. There is no logical reason why the attitude "my blood's all right" cannot be changed to the practice of having a blood test every two years.

Typhoid fever takes an average toll of about 210 lives a year in Tennessee. There are two means of prevention—immunization, a temporary measure that requires repeating probably every third year, and environmental sanitation, the more or less permanent control measure. Typhoid vaccination has probably caused more controversy than all other phases of the public health program put together. Perhaps in some instances it has been stressed locally to the neglect of environmental improvement which is most difficult to secure because the property owner must first be sold on the idea of sanitation and then induced to spend some money for it which is still another thing. Wholesale immunization is a tangible service that is adaptable to good statistical showing, but should not be utilized as the sole antidote to neutralize the dangers of insanitary environment incident to carelessness and neglect. Typhoid vaccine is available to all physicians without cost upon request.

Malaria constitutes a major public health problem. The absolute and relatively increasing incidence of estivo-autumnal malaria and the spread of the tertian type to areas considered as nonmalarious in the past justify the inauguration of mosquito-breeding control measures even of areas that are now classified as potential hazards. Many places in our state now harbor the malaria-bearing mosquito and have a susceptible local population. The only missing link is the infected person who, in these days of rapid transportation and a restless population, will show up sooner or later and the show is on. Our legislative program includes provisions for governing the impounding of water in the state, making it mandatory that certain measures be main-

tained to prevent mosquito breeding. This should be a valuable adjunct to the drainage and screening program now being stressed.

3. The State Health Department is responsible by law for the proper registration of all births and deaths—the recording of vital statistics, the bookkeeping of life and death. Reports of all communicable diseases are received and analyzed currently in order that disease prevalence and trends may be noted and preventive measures instituted. We must know what is killing our people and where these deaths are occurring. In addition to providing the only legal record of birth it is most important that all births be reported promptly if the department is to get the diphtheria notices out on time. We cannot notify the parents until the certificate of birth is filed.

4. The State Health Department laboratories provide a uniform, but limited diagnostic service to all physicians and health officers in the state. Branch laboratories are maintained at Johnson City, Knoxville, and Memphis—the latter two in cooperation with those municipalities, in order that this service may be available within a reasonable period of time to all physicians in the state who care to utilize the service provided. The Central Laboratory at Nashville manufactures and distributes typhoid vaccine, diphtheria toxoid, and silver nitrate waxules. Specimen examinations are limited to procedures for the determination of the case or carrier status of individuals suffering from or suspected of having a communicable disease.

5. The supervision of all public water supplies and sewerage systems is required of the State Health Department in order that state-wide control may be more effective. Periodic inspections are made to check the efficiency of operation of these plants. Federal regulations governing loans for waterworks and sewerage system improvements or construction require all preliminary and final plans to be approved by the State Health Department before grants will be made. As a result, approved systems are being installed and it has been of some interest to observe that our en-

gineers have checked more than ninety sets of plans during the past year as compared to an average of from six to eight during each of the preceding five years. The promotion of rural sanitation occupies an important place in the program and might be properly referred to as the check valve for the control of filth-borne diseases. The milk sanitation program needs the backing of legislation setting up grades for milk in accordance with recognized standards of production and handling. Grade A milk should be produced and handled under the same conditions throughout the state. The public deserves to know what it is buying.

6. The development, extension, and technical guidance of local health programs require considerable promotional activity and administrative responsibility of the State Health Department. In keeping with previously established policies, we first advise with and secure approval of the local medical profession before undertaking any organization or promotional activities in areas without full-time health service. Local policies, however minor in nature, should not be changed except upon approval of both the state and local boards of health. If this procedure is adhered to there should always be a harmonious working relationship and a thorough understanding of the program by the health agency and the medical profession in rendering effective public service.

The general health program in Tennessee revolves around the full-time county or district health unit consisting usually of a health officer, nurse, sanitarian, and clerk. The State Health Department assumes a consultant and coordinating relationship with the local boards of health for the specific purpose of guiding and directing the local program along lines of acceptable practice.

Public health practice requires special training just as any other specialty of medicine. High standards of personal and professional qualifications must be adhered to. The service is not and must not be made the catchall for the fellow who has failed to make the grade or who having passed the zenith of usefulness or for other reasons may desire a stated income. The work is

attracting the young and ambitious type of men, the fellows who are seeking a career and who are capable of more or less unlimited development. We need and want the type of man who reacts favorably to suggestions, who can comprehend the rural and urban needs, give due consideration to the habits, customs, and beliefs of people and have the common sense to deal with them. To get quality we must pay for it. To preserve that quality, there must be opportunity for continued study and development. The Board of Health has approved policies governing the selection of qualified personnel. It behooves us to adhere to them, select wisely, and train well. We are just entering a period of exceptional opportunity and development for which we are not wholly unprepared. Future development must be along the sound and logical lines of administrative and technical practice of the past and always in accord with accepted and approved policies. Our ultimate goal is the establishment of full-time health service in every county of the state within the next eight to ten years provided the counties want it. Expansion must be taken in stride and no more rapidly than we are able to furnish competent, well-trained workers and supervise adequately all new work—be it new departments or supplements to existing services.

7. Health education. The making available of information of practical value in life and health conservation must be extended to lay and medical groups as well. We are now engaged in a series of radio broadcasts in cooperation with the Nashville Academy of Medicine. The joint program has the approval of the State and American Medical Association Committees on Health Education. We are prepared to cooperate with the educational committee of this association just as soon as the House of Delegates approves the program that has been tentatively agreed upon for inaugurating a series of obstetrical seminars throughout the state. A similar consideration should be given the improvement of pediatric practice, syphilis treatment, and the diagnosis and treatment of tuberculosis.

The state health program is planned to benefit the greatest number of people in the

best possible way. Available medical and public health resources are admittedly inadequate to meet our present-day problems. We must, therefore, use what we have wisely and well.

DISCUSSION

DR. JOHN M. LEE (Nashville): Mr. President, Ladies, and Gentlemen: I think it is very fortunate that we have had the opportunity of having Dr. Williams discuss with us the program and the problems of the Tennessee State Department of Health. I think a review of that department each year, in whole or in part, should be a fixed part of this program.

One point that I want to speak about particularly in connection with this subject is the responsibility of those of us engaged in private practice in the general public health program of the state.

As has been stated already this morning, public health in Tennessee will progress in proportion to the contribution to that activity which the private practitioner makes. Without your support, without your help, it will not progress as it should.

It is my impression that the State Department of Health administration is interested primarily in providing to the people of Tennessee the very best possible public health service in the very best manner. It is their desire that their program dovetail with the activity of the private practitioner so that there may be no conflict. In many ways you may support this program to your advantage as well as to the furthering of public health.

The reporting of vital statistics has been mentioned by Dr. Williams. That always has been important, and at this particular time is especially so, because shortly, as he has stated, there will be distributed free of charge to all the physicians of the state diphtheria toxoid for the immunization of susceptibles to this disease. The parents of children ought to be notified that at the proper age those children should be inoculated. If you don't report the birth of the baby, how in the world will the State Department of Health and the County Department of Health be able to bring to that parent the information necessary?

In the past year some 200 deaths have occurred in Tennessee from diphtheria. There is no excuse for that. I wonder sometimes, when your patient dies of diphtheria, if the question ever enters your mind: How much have I contributed to that occurrence by omission?

We believe that the formation and development of county boards of health along the lines set out by legislation in the last legislature offers a great aid in improving public health work in the state. As you know, the medical profession of each county has representation on the Board of Health and thereby has certain responsibility in the formulating of the plans and practices of the health department of that unit.

In some counties, unfortunately, there has been some indifference. We hope that when you go home you will correct that error in the event such exists in your county.

There are numerous details of the program mentioned that might be discussed at length, but time prohibits that.

The past year and a half it has been my privilege to represent this association as a member of the State Board of Health and as a member of that board I have had numerous and pleasant contacts with the administrator and his assistants in that department. I believe it is the sincere desire of that administration to carry on the activities of this department in harmony with the wishes and interests of the private practitioners in the state. I believe the State Commissioner of Health has demonstrated an unusual amount of ability, he is a hard worker, and I believe he is sincerely interested in conducting his work to the best interest of all the people in the state, including the medical profession. I commend to you, gentlemen, your State Department of Health and your Commissioner of Health.

PRESIDENT JOHN B. STEELE (Chattanooga): I would be derelict in my duty if I failed to express my appreciation personally and the appreciation of organized medicine in Tennessee for all that Dr. Lee has done in helping work out the problems of our Health Department. He stands alone, I think, as our leader in this.

DR. J. R. THOMPSON, JR. (Jackson): I did not hear Dr. Williams' paper, but I have read it. He has covered in a very short space practically the entire program that has been outlined by your Board of Health. We have in mind one or two other things that we would like to suggest as possibilities. Personally, I would like to see every county in the state of Tennessee, or at least every unit of the counties where the population is so small that it would not support such a program, organize into full-time health units so that all the people in the state of Tennessee could be given the advantage of the program as we hope to carry it through in the state department.

We believe that the department is now traveling on the right road. Heretofore it seemed the Department of Health and the State Medical Association were going in absolute opposite directions, but we found out after we had ironed out a few things that we both had the same objectives in view, but were going in separate paths to get there. We believe that certain of these misunderstandings have been ironed out and that in the near future we can go forward, as Dr. Lee has outlined, in a very constructive campaign, particularly for the abolishment of diphtheria.

We are thoroughly against the sticking of needles into thousands of people and immunizing them against typhoid with no educational program.

Therefore, we believe in stressing further the educational program as outlined by the Department of Health and leaving the immunization to the private practitioner. That, I believe, is the consensus of the board as it now stands. You gentlemen have asked for it and I hope you accept the responsibility that we have given you. The Department of Health will attempt to educate and you, we hope, will immunize.

I think Dr. Lee covered everything that I could say about the harmonious cooperation that it has been our pleasure to enjoy for the last year and a half between your elected delegates on the State Board of Health and the present administration.

DR. H. H. SHOULDERS (Nashville): Mr. President, I felt that I should like to say that the address by Dr. Williams and the discussion by two members of the present board which you heard portrays a situation which I think the organized profession was anxious to see come about; I think it portrays the wisdom of those who some years ago began looking toward such a harmonious relationship between the organized Department of Health and the organized profession of medicine.

Dr. Sanders is here in the room. I know he had some vital things to do about it.

So far as we have been able to observe, this

situation has evolved in a very happy fashion, and the public is the beneficiary.

DR. R. L. SANDERS (Memphis): Dr. Shoulders just called to my mind a minute ago what the liaison committee accomplished, which was more or less the go-between. Many of us had visualized this for a long time. I recall very well the session we had in Nashville some years ago when I was a member of that committee, and we were all of the same opinion, that this condition should be brought about as we have seen today. I am more than pleased to see that it has been done. Now we have this excellent Board of Health at work, it is ours, and we are working out our own problems. It is a great joy and privilege to be here this morning and hear Dr. Williams' address and the outline of the program that we have. I appreciate it very much and I am sure that you do, too.

DR. W. C. WILLIAMS (closing): Mr. President, I have nothing to add to the discussion. I do want to take this opportunity, though, to express my appreciation to Dr. Riven and to you for changing the time. Also I want to invite all members of the State Association individually and collectively to stop by and see your Health Department when you are in Nashville.

THE IMPORTANCE OF EXAMINING FAMILIAL CONTACTS OF TUBERCULOUS INDIVIDUALS*

R. S. GASS, M.D., Clinician, State Department of Public Health, Nashville

IN DISCUSSING any phase of tuberculosis control in Tennessee, it is important to bear in mind certain facts concerning the disease which are revealed through an analysis of morbidity and mortality records. The tuberculosis death rate for Tennessee is one of the highest in the nation. For the year 1934 the rate was 89.7 per 100,000 population. The white rate for that year was seventy-one, while the rate for the colored race was 175, or two and one-half times that of the white population. When the death rates by age, sex, and place of residence are considered, certain interesting facts are noted. The white tuberculosis death rate in the rural areas exceeds the white urban rate by fifteen per cent. The white female death rate is twelve per cent higher than the white male rate and this excess rate in the female is evident in all age groups with the exception of the age period thirty-five to fifty-four years.

In comparing the white death rates from tuberculosis in Tennessee with those of other states, a most striking difference is noted in the older age groups. In this state the death rate from tuberculosis in old people is exceedingly high. For example, in the age group sixty-five to seventy-four, the rate for the white male is 251.5 per 100,000 population, and for the female the rate is 288. In the next older group, seventy-five years and over, the rate for the male is 258 and for the female 355.5 per 100,000 population.

In the colored population the death rate is high for the age period twenty to thirty-five years. The age distribution of the colored death rates, however, is similar to that of the United States registration area.

Because tuberculosis is a disease which progresses slowly and inconspicuously, its transmission from the sick to the well may

be overlooked and the tragic results are often not popularly attributed to preventable contagion. It is now generally believed that the spread of tuberculosis occurs in a large part by long-drawn-out family or household epidemics in which the disease is slowly transmitted from one generation to the next.

The success in the treatment of the disease, as well as its prevention, depends to a great extent upon an early diagnosis. Improvement in the early diagnosis of tuberculosis depends largely upon the recognition of the disease, in selected groups, before symptoms become manifested and health impaired. The family or household in which there has been a case of tuberculosis furnishes a group in which varying degrees of tuberculous infection and disease are most likely to be discovered.

Observations at the Henry Phipps Institute in Philadelphia have shown that the repeated examination of persons in contact with tuberculosis may reveal ten to twenty per cent with tuberculosis producing either symptoms or signs or both, and in thirty per cent or more with small apical lesions which are asymptomatic. Similar observations have been recently made in a tuberculosis study conducted by the Tennessee Department of Public Health in Williamson County. In the examination of a group of families in contact with a case of tuberculosis it was found that eleven per cent of the adults examined had serious tuberculous lesions in the lungs. This is in contrast to two per cent found in the examination of adults in families with no contact history.

The danger to which members of a family in contact with a tuberculous patient are exposed varies greatly and is dependent upon a variety of factors. The length of the period of contact and the type of the disease are important considerations. The abundance of tubercle bacilli in the sputum of the patient as determined by the Gaffky

*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1936.

count is significant, particularly in instances where the patient is careless in his habits. There is no doubt that continued exposure to massive doses of tubercle bacilli is conducive to the development of serious lesions in the lungs of those in contact. Overcrowding and lack of household cleanliness influence the spread of the disease. Other factors such as overwork, worry, and lack of adequate food seem to favor the development of tuberculosis in a family.

Once it is known that an individual has tuberculosis, an attempt should be made to examine every member of the family. Such a procedure will not only reveal to what extent the other members are infected, but will often uncover the real source of infection in some member of the family other than the patient. Reference is made to individuals having the chronic fibroid type of tuberculosis who have not been particularly ill and, consequently, have not been diagnosed. The initial examination of the family contact group should be followed up by periodic re-examinations in order that developing lesions may be recognized as early as possible.

METHODS OF EXAMINATION

The examination of a contact group to determine the extent and result of tuberculous infection and disease should include a consideration of the following: a personal history, physical examination, tuberculin test, X-ray, and laboratory investigation.

According to Opie and McPhedran,¹ "It may be said in general terms that the tuberculin test defines the incidence of tuberculous infection, roentgenological examination shows the anatomical extent and in some degree the character of the tuberculous lesions, whereas symptoms and physical examination are an index of functional disturbance and serve to determine to what extent health has been impaired."

ASYMPTOMATIC LESIONS

Our knowledge of tuberculous infection has been greatly extended during recent years. Anatomical observation, tuberculin

test, and roentgenographic examinations have introduced new aspects of the subject which differ from pre-existing ideas. This is particularly true with regard to the presence of significant tuberculous lesions in the lungs, unaccompanied by symptoms or physical signs, and revealed only through the use of the X-rays. The potential importance of such lesions varies widely with the character and extent, and also the age, sex, and color of the individual in whom they are found.

In the investigation of contact groups, it has been found that many persons showing evidence of asymptomatic lesions in the lungs roentgenologically, later show extensive involvement accompanied by symptoms. This is particularly true among individuals in adolescent and early adult life.

Several studies among medical students and nurses have been carried on in recent years which have demonstrated that small asymptomatic apical lesions later become both clinically and pathologically active. The X-ray is indispensable in demonstrating these lesions as there is no other method by which they can be recognized. The tuberculin test is positive in most instances, but such a reaction in the age group involved is not significant. In addition to demonstrating these early lesions, the X-ray is also of value in determining whether or not they are active. If the infiltration appears soft or flocculent it generally means that the process is active, whereas strand-like infiltration in most instances signifies fibrosis.

The importance of recognizing tuberculosis in such an early stage is evident. If adequate treatment is instituted the condition responds readily and the disease is prevented from becoming advanced. As a rule, a modification of the usual treatment for tuberculosis is all that is required in order to obtain a cure.

CHILDHOOD TYPE OF TUBERCULOSIS

In the examination of children who have been in contact with tuberculosis, it is not common to find the adult type of the disease. Lesions present in the lungs are generally due to a first infection by tubercle bacilli and may occur in any part of the

¹American Journal of Hygiene, Vol. 22, No. 3, 565-643, November, 1935.

lungs. This is in contradistinction to the early lesions found in the adult which are presumably due to a reinfection and usually occur in the apices. The term "Childhood Type of Tuberculosis" has been applied to the condition produced in the lungs and adjacent lymph nodes by a primary infection.

The methods employed to determine the degree of infection in children is through the use of the tuberculin test and X-rays.

It is in the examination of children that the tuberculin test has its greatest value. A positive reaction in a child under one year of age has grave significance because the tuberculous infection thus revealed often pursues a fatal course. The majority of deaths from tuberculosis in childhood occur in infants and very young children who develop miliary tuberculosis or meningitis. In most every instance these young children have been in close association with an open case of tuberculosis and receive massive doses of infection which they are unable to withstand.

With increasing age the value of a tuberculin reaction diminishes until, in young adult life when nearly all have a positive reaction, the test is of little value. In tuberculin testing children in Williamson County, certain interesting facts have been disclosed. In children under five years of age who have been in contact with a sputum positive case of tuberculosis, eighty-five per cent reacted to the tuberculin test. This is in contrast to fifteen per cent in children in the same age group who had no history of contact. In testing children in the age group five to fourteen years with a history of contact, seventy-one per cent had a positive reaction, while in the age group fifteen to twenty-four, ninety per cent reacted positively.

The intensity of a tuberculin reaction is not an index of the extent of the involvement to be found upon X-ray examination of the chest. Not infrequently a child with a four-plus reaction will show only a small parenchymal nodule in the X-ray film. The four-plus reaction does indicate, however, that the child has been heavily infected recently.

Generally speaking, tuberculous infection in children between the ages of two and twelve years is benign in character and very few develop serious lesions or become ill. Even in children who have had long continued contact there is a tendency toward healing of the tuberculous infection.

In the observation of contact children in Williamson County between two and twelve years of age, the most common lesions demonstrated by X-ray were nodules in the parenchyma with a secondary calcification in the tracheobronchial lymph nodes. In a few instances infiltration of the childhood type was noted.

After some of these children reached adolescence, however, it was found that several who had previously had a benign childhood type of infection developed an adult type of tuberculosis. The relationship of the first infection of childhood to the development of the disease in adolescence or early adult life is a debated question. Some authorities are of the opinion that in early adult life an endogenous reinfection can occur from a previous childhood infection. Others believe that all cases of adult type of tuberculosis are due to an exogenous reinfection. Regardless of which theory is correct, it has been found that individuals who have been in contact during childhood develop tuberculosis more frequently than those not having such a history.

In children who have been infected, it is important to prevent exogenous reinfection. Particular attention should also be given to the correction of physical defects and the improvement of their general health in order that they may overcome the possibility of "breaking down" with tuberculosis in young adult life.

TUBERCULOSIS IN THE AGED

The excessive death rate from tuberculosis in the older age groups, which is apparently peculiar to Tennessee, is one fact that should be remembered in discussing the examination of familial contacts. In investigating the members of a household the examination of older people is apt to be neglected. One reason for this is the

difficulty in getting these individuals to subject themselves to examination.

In conducting routine chest clinics throughout the state, many old people are examined and found to have advanced tuberculosis. The reason for their attendance at the clinics, in most instances, is due to the fact that they are members of a family in which there is a person ill of tuberculosis. A history of most of these individuals will not reveal any serious illness during their lives. Some will admit that they have had a chronic cough and expectoration for years, but this they have diagnosed themselves as being due to a chronic bronchitis. Others will give a history of blood-spitting during a period of early adult life, for which they did not receive treatment. Establishing the date of onset of tuberculosis in these old people is difficult. In many instances the history indicates an onset forty or fifty years previous to the time of examination. This type of tuberculosis in the aged is commonly referred to as chronic fibroid tuberculosis. It is characterized by a history of symptoms referable to the lungs over a long period of time which have not caused any particular disability. An X-ray examination shows that the infiltration has a tendency to be strand-like in character rather than soft and flocculent as usually seen in active tuberculosis. Cavities, if present, are usually thick-walled. If there is considerable fibrosis in one lung, the mediastinal structures will be displaced to the affected side and the trachea will likewise be deviated. There is often evidence of atelectasis in one lung with compensatory emphysema in the opposite lung.

The extent of the tuberculous process discovered in these old people may vary from a small portion of one lobe to an extensive involvement of both lungs.

Observation of a group of chronic fibroid cases has shown that the results of sputum analyses may vary from time to time. Continued analyses of the sputum of a patient of this type may, for a period, show the presence of tubercle bacilli; for example, during a time when the patient has what he terms an attack of acute bronchitis or influenza. It is evident that this group

furnishes a probable source of infection in a family and, as such, must not be overlooked.

The following is a representative history of a family illustrating the transmission of tuberculosis from one generation to another:

FAMILY I

Individual 1.—White, male, age 36. Diagnosed active tuberculosis by family physician in 1926. Two brothers died of tuberculosis several years before. First examined at a clinic in August, 1932, and diagnosed as far advanced tuberculosis. At this time his symptoms were cough, pleurisy, expectoration, fatigue, and blood-spitting. On physical examination moderately coarse rales were heard over the upper half of the lungs. The X-ray examination showed extensive infiltration in both lungs with cavities on both sides. Sputum analysis at this time was positive. He was up and about most of the time. Several re-examinations during the next two years showed a gradual increase in the tuberculous involvement and the bacilli in the sputum became more abundant. In August, 1934, he became bedfast and died in January, 1935.

Individual 2.—White, female, age 14, daughter of individual 1. Examined in August, 1932, because of history of contact with father. She had no symptoms and no history of illness referable to the lungs. The tuberculin reaction at this time was one-plus to .01 milligram. Her temperature was 100.6 and pulse 116. Physical examination revealed rhonchi and rales in the upper half of the left lung. X-ray examination showed scattered areas of calcium in the parenchyma and lymph nodes. There was a moderately coarse mottling throughout the upper half of the left lung. Diagnosed as moderately advanced tuberculosis. Re-examination on September 20, 1932, showed the tuberculous involvement to be more extensive. Cavities at this time were noted in the left apex and there was considerable infiltration in the right lung. The sputum was positive and she had a slight productive cough. This girl began taking complete bed rest at this time. Pneumotho-

rax was recommended but not given. Patient gradually became worse and died on September 2, 1933.

Individual 3.—White, female, age 35, wife of individual 1 and mother of individual 2. Physical and X-ray examinations on three occasions during the period were negative. Tuberculin test was positive, three-plus to .01 milligram.

Individual 4.—White, male, age 9, son of individual 1. First examined in August, 1932, because of contact with father. No symptoms. Tuberculin test was one-plus to .01 milligram. Physical examination was negative. X-ray examination was also negative. Several re-examinations up to July, 1935, showed no evidence of tuberculosis other than the positive tuberculin reaction.

Individual 5.—White, male, age 5, son of individual 1. First examination in August, 1932. No symptoms. The tuberculin reaction was positive, two-plus to .01 milligram. An X-ray examination showed enlarged tracheobronchial lymph nodes on the right side. There was some infiltration in the second and third interspaces. The condition was diagnosed as childhood type of tuberculosis. X-ray re-examination several months later showed calcium formation in the lymph nodes. Several later re-examinations showed a diminution in the size of the tracheobronchial lymph nodes with further calcium formation and also a contraction of the infiltration. The child has never had symptoms and at present is in good health.

Individual 6.—White, female, age 76, mother of individual 1 and grandmother of children. She had an illness fifty years before which was never diagnosed. At that time she had a severe cough and some expectoration. Ever since that time she had a chronic cough with periods of blood-spitting and attacks of pleurisy.

She refused to attend the clinic for examination. In September, 1932, a clinician made a physical examination at her home. On this examination he found a marked impairment and limitation of motion over the upper half of the right lung. The breathing was harsh over the same area and numerous moderately coarse rales were heard. A loud systolic murmur was heard over the

mitral area. A diagnosis of active chronic fibroid tuberculosis and organic heart disease was made. Several sputum analyses during the next two years were negative. She consented to an X-ray examination in March, 1934. This examination showed strandlike infiltration throughout the right lung, extensive calcification and bronchial dilatation. The pleura was thickened over the lower lobe. There was some infiltration in the upper third of the left lung and emphysema in the lower portion. The condition was diagnosed as far advanced chronic fibroid tuberculosis. She became ill in January, 1936, from a heart attack and died on February 2. A sputum analysis two days before death was negative. Presumably this old lady was the original source of infection in this family.

SUMMARY

1. The tuberculosis death rate in Tennessee is one of the highest in the nation. Analysis of the death records by age, sex, color, and place of residence shows certain variations when comparison is made with similar data for the United States Registration Area.

2. The tuberculosis death rates are excessive in the older age groups in Tennessee. Routine chest clinics conducted throughout the state show a high incidence of tuberculous disease in these groups.

3. The spread of tuberculosis occurs in a large part by long-drawn-out family or household contact in which the disease is transmitted from one generation to another.

4. Improvement in the early diagnosis of tuberculosis depends largely upon the recognition of the disease before symptoms become manifested. Hence, the importance of examining apparently healthy individuals who have had familial contact with the disease.

5. Roentgenographic examination of familial contacts often reveals significant asymptomatic reinfection type of lesions. Observation of young adults with such lesions shows that frequently the involvement later becomes extensive with symptoms.

6. The greatest value of the tuberculin test is in the examination of children. A

positive reaction in children under one year of age has a grave significance.

7. The majority of deaths from tuberculosis in children occur during infancy. Tuberculous infection in children between the ages of two and twelve years is usually benign in character. After twelve years of age, children who have been in contact are apt to develop the adult type of disease.

8. Tuberculosis in old people furnishes a definite problem in the control of the disease. A characteristic of the disease found in this group is the history of long duration.

DISCUSSION

DR. W. W. HUBBARD (Nashville): Dr. Gass has presented some interesting statements in his paper, and his slides illustrate graphically the necessity of considering the contacts.

One hears much of the family doctor. Probably no disease requires the attending physician to be a real family doctor as much as does tuberculosis. Unfortunately, too often only the patient is considered and the contacts are forgotten.

I should like to emphasize some of the statements that Dr. Gass has made. First, the death rate, 89.7 per 100,000 population. That is about 2,500 deaths a year—a fairly good-sized town; 25,000 active cases in the state, or around that number; that is a town perhaps the size of Jackson.

I should like to call attention particularly to the Negro death rate, 175. Now we must consider Negroes in this part of the country. They are our servants; they live in our homes in almost as intimate contact as other members of the family; they cook for us and they nurse our children so they must be considered.

Second, I should like to talk about the high death rate in old people, especially in rural communities. They seem to be entirely peculiar to Tennessee. Many of these cases have been found to be the source of infection for entire families. It is rather difficult to control old people. As he said, most of them consider themselves as having chronic bronchitis.

Third, eleven per cent of the adults in contact families have tuberculosis. Only two per cent in noncontact families have it. That is five times as much.

Most of the spread of tuberculosis now, of course, is considered as somewhat of a family epidemic. Heredity is no longer considered an item. Close contact in the family is the major consideration.

Many of these children with benign lesions, as the doctor pointed out, develop active infections at

puberty, at the time when the metabolism is undergoing considerable change. If we can properly supervise these contacts, these children who have been found to have benign lesions, and see that they have proper supervision at the time they reach the active stage of their lives, the productive stage, from ten to fifteen on up to the twenty-fives and thirties, we will perhaps prevent a great many cases of active tuberculosis.

I should like to quote one statement that he made: "There is no doubt that the continued exposure to massive doses of tubercle bacilli is conducive to the development of serious lesions in the lungs of those in contact."

It is necessary to break this contact as much as possible.

The most effective and the quickest method of closing open cases, that is those with positive sputum, is, of course, by collapse therapy, and Dr. Williams touched on that a few minutes ago in his paper. This can be carried out in almost any general hospital without any special facilities and without very much expense. As an example, I would like to cite the pulmonary clinic in the Nashville General Hospital, which was established about two years ago. We spent about \$75 establishing that clinic, to get the material necessary. That is a comparatively small expense. In that time we have seen about two hundred cases of all types of pulmonary tuberculosis, that is, from the incipient to the far advanced. (Of course, there are very few incipient.) In these we have been able to collapse forty-seven, forty of them by pneumothorax; seven were other forms of collapse; twenty-seven of those forty-seven cases have been rendered sputum free. Many of these patients live in close quarters, have inadequate food supply, and when we could not make other arrangements for them we have been able to stop their contact with an open case. Sixteen of those cases still have a positive sputum, yet the number of tubercle bacilli in the sputum have been considerably reduced. We are cutting down this massive dose of tubercle bacilli that children or other contacts are being subjected to.

Those in which we have been unable to do any form of collapse we have tried to instruct as to the proper disposal of sputum; we have hammered into them the idea of covering their mouths when they cough, and the disposal of the sputum when they expectorate. In that way we have been able to accomplish something, we feel.

Consumption is a very good name for this disease—it consumes time, it consumes money, it consumes people. In many of these cases the proper place to start of course is with the contacts.

DR. R. S. GASS (closing): I only wish to thank Dr. Hubbard for discussing my paper.

THE FORMULATION OF DIABETIC DIETARIES

(A "One, Two, One-and-a-Half" Method for Preliminary Use with Adult Ambulatory Patients)

R. C. DERIVAUX, M.D.,* Nashville

UNCERTAINTIES as to procedure in the formulation of diabetic dietary prescriptions are still seemingly a source of difficulty to those whose duties in this regard are only occasional, and any simplification, in so far as allowable, should be of more than just theoretical interest. During the past three years a method employing an easily remembered formula has been found to be sufficiently satisfactory as to warrant recommendation. It provides for the allotment of protein, fat, and carbohydrate in approximate proportion to individual needs and it has been found to be readily teachable—not only to students as a quick "rule of thumb" for clinic use, but also to physicians of older schools of instruction and of an understandable antipathy to more involved procedures.

The formula, "One, Two, One-and-a-Half," embraces practically all that need be remembered. It means that for each kilogram of "ideal" or standard body weight, one may arbitrarily assign one gram of protein, two grams of fat, and one and five-tenths grams of carbohydrate and obtain thereby a satisfactory prescription for a day's intake of food for an adult patient not confined to bed. The method is intended for use at the beginning of the regulation of a new patient, and changes will naturally be required as the measure of the diabetic limitation becomes known, as insulin may be used, and as tolerance is gained. It is obviously not suggested for use under hospital conditions nor in the presence of complications.

PROCEDURE

1. The patient is measured and weighed.
2. The average or "ideal" weight for sex, age, and height is obtained from a suitable table.

3. The ideal weight in pounds, if an inch-pound table has been used, is converted into weight in kilograms by calculation (one kilogram equals two and two-tenths pounds).

4. The food allotments for the day are assigned on the basis of the formula: for each kilogram of ideal body weight are given protein one gram, fat two grams, and carbohydrate one and five-tenths grams.

5. The allotted totals are divided into three parts representing the three usual daily meals which are then prescribed in suitable and quantitative detail.

EXAMPLES

1. For a patient whose ideal weight is one hundred and ten pounds (fifty kilograms):

P.	50 grams
F.	100 grams
C.	75 grams
Total calories	1400
Calories per kilogram.....	28
Total "G" value.....	114 grams
Total "FA" value.....	113 grams
FA : G ratio.....	1 : 1

2. For a patient whose ideal weight is one hundred and thirty-two pounds (sixty kilograms):

P.	60 grams
F.	120 grams
C.	90 grams
Total calories	1680
Calories per kilogram.....	28
Total "G" value.....	136 grams
Total "FA" value.....	135 grams
FA : G ratio.....	1 : 1

3. For a patient whose ideal weight is one hundred fifty-eight pounds (seventy-two kilograms):

P.	72 grams
F.	144 grams
C.	108 grams
Total calories	2016
Calories per kilogram.....	28
Total "G" value.....	164 grams
Total "FA" value.....	162 grams
FA : G ratio.....	1 : 1

*From the Department of Medicine, Vanderbilt University School of Medicine.

Once the ideal weight in kilograms is obtained, formulation of the prescription may be done at a glance. The food allotments assigned will yield twenty-eight calories per kilogram, or a *basal requirement*, if computed arbitrarily at twenty-five calories per kilogram per day, *plus twelve per cent*, which will suffice for a patient's being up and about though doing little or no work. The protein content is adequate. The distribution of calories from fat and carbohydrate is conservative and avoids extremes in favor of either. The fatty acid: glucose ratio as calculated by Woodyatt's formulae¹ is substantially 1 : 1; the fat allotment could hence be increased by seventy-five per cent additional if desired, protein and carbohydrate remaining unchanged, without exceeding a FA : G ratio of 1.5 : 1; such an addition of fat would increase the caloric value of the diet by nearly fifty per cent and the calories per kilogram of body weight to 41.5, an amount sufficient for any ordinary degree of physical exertion.

Once control of the patient's condition is arrived at, either with or without insulin, the diet may be amplified by the substitution of extra carbohydrate for a part of the fat or otherwise modified as may be deemed desirable.

Comment.—The procedure described here has certain definite advantages. It is open to criticism as not being sound fundamental

teaching for students who are presumed to understand and apply the reasoning which underlies the prescription of diabetic dietaries on a more exact basis. As stated, it is not intended as other than a "preliminary" or "method of approach," and as such it has been found to be both useful and easily remembered. To postgraduate students of varying degrees of antecedent preparation and to older physicians in practice, its advantages of simplicity may have special appeal.

SUMMARY

1. A simple method for the formulation of preliminary diabetic dietaries is described.

2. Its formula, "One, Two, One-and-a-Half," indicates its application. For each kilogram of body weight are assigned one gram of protein, two grams of fat, and one and five-tenths grams of carbohydrate.

3. The resulting dietary prescription provides an allotment of twenty-eight calories per kilogram of body weight, approximately a basal requirement plus twelve per cent.

4. The dietary prescription is conservative in its distribution of fat and carbohydrate. It has a fatty acid : glucose ratio of 1 : 1 and has consequently a fairly large capacity for the addition of extra fat without becoming potentially ketogenic.

REFERENCE

Woodyatt, R. T.: "Objects and Methods of Diet Adjustment in Diabetes." *Arch. Int. Med.*, 28: 125 (August), 1921.

¹FA = 0.46 P + 0.9 F. G = C + 0.58 P + 0.1 F.



WILSON L. WILLIAMSON, M.D., F.A.C.S.
President, Tennessee State Medical Association

Our New President

Dr. Williamson was born in Milan, Tennessee, April 25, 1880, the son of George Wilson and Emily Smith Williamson. Five sons, of which he was the fourth, and two daughters were reared. His father died some years ago. Through him he is related to the well-known Drs. Yandell of Louisville, Kentucky. His mother is still living in a green old age at Milan.

Dr. Williamson received his first two years of medical instruction at the University of Nashville and graduated from Tulane University in 1910, serving his internship in Charity Hospital. He came to Memphis and began his professional career in July, 1910. He immediately identified himself with organized medicine, and became affiliated with the University of Tennessee, College of Medicine, in which he now holds the position of Associate Professor of Gynecology. He holds positions on the Attending Staffs of the Methodist, Baptist, and John Gaston Memorial Hospitals. In 1934 he was elected president of the Memphis and Shelby County Medical Society. Among other positions of honor and responsibility he has held are chairman of the Tennessee Section of the American College of Surgeons and trustee of the Tennessee State Medical Association. In 1920 Dr. Williamson and Miss Jean Gray Hunter were married. They have three daughters.

Evaluating a man's character is not easy in any instance and it can be done accurately only by one who has known him well for years. But when all who know him well agree without dissent on the characteristics of the man there can be no argument about his possessing them. In this instance they are clear and distinct. Summing up the qualities of a man in his lifetime is a rather delicate matter. And few of us are given to expressing to a friend our regard for him and our appreciation of his good points during his active moments. We are entirely too prone to save them for an obituary, when our opinions are a matter of complete and absolute indifference to him.

Dr. Williamson has a strong personality marked by fine traits of character. Energetic, enthusiastic in whatever he undertakes, loyal to his convictions, courageous and honest in his opinions, dependable and reliable in all his relations, possessing a well-balanced mind and sound judgment, he is admirably fitted for the office to which he has been elected. The wisdom of selecting him as president of the association in these rather critical days now upon us will become manifest in the coming months.—A. F. C.

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H. H. SHOULDERS, M.D., Editor and Secretary

MAY, 1936

EDITORIAL

Now and then some doctor makes a remark to the effect that organized medicine makes no progress.

The word *progress* is hard to define. Certainly we have a different idea of progress now of what we had in 1929. What many of the politicians call progress was nothing more than the multiplication of debts with which to make a show of progress.

Some days ago we received from Dr. S. R. Miller, of Knoxville, a statement which he has given us permission to run on the editorial page. He has designated it "A Reminiscence of Encouragement."

Dr. Miller has enjoyed intimate contact with organized medicine in Tennessee for a long span of years. He has been president and in so far as recollection goes he has been in the harness in one way or another each year within the memory of most of us. His testimony is entitled to respect. We agree with him that organized medicine has made and is making rapid progress along sound lines. The statement is as follows:

A REMINISCENCE OF ENCOURAGEMENT

Sometimes there is heard in the House of Delegates, or among the rank and file of the membership, a plaintive note of discouragement at our slow progress in matters medical. To some of us, who have made close observation of our work for a number of years, this does not seem justified.

In 1903, our association reorganized

along the line of the plan recommended by the American Medical Association, and being adopted at that time by some of the state associations.

In 1904, the association functioned first with a house of delegates, a council, and two or three standing committees, appointed annually by the president. In the following first few years, the reports of the council, and the few committees, were very meager, and often there was no report from any committee except the one on scientific program. When committee reports were called for members reported no meeting of committees and little or no work done during the year. The delegates to the A. M. A. made only a brief verbal report from memory of the meeting ten months before.

A majority of the councillors were ignorant of the work to be done by them, and thought their work purely judiciary. Even the House of Delegates did not clearly perceive their duties.

Not so now. Those who were in the last House of Delegates and saw the splendid work under the guidance of Drs. Zemp and Shoulders feel greatly encouraged.

The committees, as a whole, made full reports, showing extensive study and much constructive work.

Verily, our state association is now alive and functioning efficiently.

Knox County made an enviable record of attendance at the Memphis meeting. Twenty-nine Knox members attended this meeting.

It will be interesting to see if Memphis has as large an attendance of Shelby County members at Knoxville next year.

POSTGRADUATE WORK

For some years now those in executive positions in the state association have felt the need very keenly for some additional form of postgraduate instruction.

It is exceedingly difficult for a practitioner to leave his practice for a considerable length of time. It is difficult for a two-day program in medicine to cover the field.

Recently there has been evolved a plan by which postgraduate instruction is car-

ried to the practitioner and plans are now under way to bring this about in Tennessee.

The State Medical Association, the State Board of Health, Vanderbilt University Medical Department, University of Tennessee Medical Department, and the Commonwealth Foundation will participate—the latter furnishing a larger per cent of the money.

A conference was held recently with a representative of the Commonwealth Foundation and representatives of the groups above mentioned as a result of which it is believed a plan will be perfected whereby a cooperative effort of great benefit to the profession and the public will be brought about. Further details of the plan will be published from time to time.

NEWS NOTES AND COMMENTS

The Tennessee Academy of Ophthalmology and Otolaryngology met in Memphis, April 13. The attendance was good, papers well prepared, and discussions interesting.

Officers were elected as follows:

R. O. Rychener, Memphis, President.

H. Carroll Smith, Nashville, Vice-President.

W. D. Stinson, Memphis, Secretary-Treasurer.

TENNESSEE STATE PEDIATRIC SOCIETY

At the meeting in Memphis on April 14 the program was rendered as published. Papers read at that time will be published in this JOURNAL during the year. The attendance was good and the meeting was a success in every respect.

Officers for the coming year are as follows:

Dr. John M. Lee, Nashville, President.

Dr. W. L. Rucks, Memphis, Vice-President.

Dr. Kinsey M. Buck (reelected), Secretary-Treasurer.

Executive Committee

Dr. Joe T. Smith, Knoxville, Chairman.

Dr. C. W. Friberg, Johnson City.

Dr. Owen Wilson, Nashville.

Dr. Arthur Jacobs, Memphis.

Dr. E. W. Cocke has opened the Hayes Sanatorium near Memphis. The place has been remodeled. Additional scientific equipment has been added and fitted better to handle mental and nervous cases. In addition to the hospital facilities Dr. Cocke is conducting a clinic for patients who can be treated in their homes.

For the last twenty years Dr. Cocke has been with the Western State Hospital at Bolivar and more recently has been Commissioner of Institutions for the State of Tennessee.

We feel sure that the staff headed by Dr. Cocke and backed with the best equipment will make The Dr. Edwin W. Cocke Sanatorium and Clinic one of the outstanding institutions of the country.

Minutes of the Memphis meeting will be published in the June issue, according to the present plans.

The meeting as a whole was a very pleasant occasion.

The program was well prepared. The attendance was 434.

The next meeting place will be Knoxville.

For list of officers elected and committees appointed you are referred to another page of this Journal.

WOMAN'S AUXILIARY

President.....Mrs. Theodore Morford
Nashville

President-elect.....Mrs. W. T. Black
Memphis

Press and Publicity.....Mrs. Oscar Nelson
Nashville

REPORT OF THE STATE CONVENTION

A large number of interested members registered at the Hotel Gayoso at Memphis on April 14, 15, 16 for the annual convention of the Woman's Auxiliary to the Tennessee Medical Association.

At the board meeting on Tuesday afternoon Mrs. R. G. Reaves, president, greeted the members enthusiastically. Brief reports were made and some important changes in the constitution were voted upon. June 22 was set aside for "Doctors' Day,"

when the medical profession will be honored.

On Tuesday evening a delightful buffet supper was given for the executive board at the home of Mrs. Willis Campbell. Later in the evening the members of the local auxiliary and the out-of-town guests joined the group for a reception and for a musical program by a nationally-known opera star and a pianist who was one of Memphis' foremost composers and musicians.

The regular annual meeting of the Woman's Auxiliary to the Tennessee Medical Association was held on Wednesday at 9:30 a.m. with Mrs. R. G. Reaves presiding. An invocation by Dr. C. C. Daniels opened the meeting. This was followed by an address of welcome by Mrs. W. S. Lawrence, president of the hostess auxiliary. A response was given by Mrs. Matt B. Murfree, of Murfreesboro. There followed a brief memorial tribute to the memory of three members who had died during the year—Mrs. George Kelly, Mrs. A. G. Nichol, and Mrs. J. J. McCaughan. Mrs. W. C. Campbell, chairman of the convention, announced the plans for the entertainment of the guests. The reports of the treasurer, committee chairmen, and county presidents were extremely enthusiastic, showing evidence of increasing strength in all branches of auxiliary work. The auxiliary was fortunate in having for the main speaker of the meeting the national president, Mrs. R. N. Herbert, of Nashville, who spoke on the subject of "The Medical Profession versus the Woman's Auxiliary." Mrs. Herbert's impressive address was followed by a report of the national convention by Mrs. T. G. Pollard in which she told of the convention at Atlantic City last June. Brief remarks and an invitation to all members to attend the meeting of the Woman's Auxiliary to the Southern Medical Association were given by Mrs. Oliver Hill, of Knoxville, president of that auxiliary.

Following the business of the morning the ladies were entertained by the hostess auxiliary at a luncheon and card party at the Nineteenth Century Club. The ballroom of the club was effectively decorated with quantities of flowers, giving the im-

pression of a garden. Additional color notes were carried out by the gypsy costumes of the schoolgirls who passed trays of candy among the guests. The singer, violinist, and pianist who gave a musical program during the luncheon also wore brilliant gypsy regalia.

The annual banquet was held on Wednesday evening at the Hotel Peabody. The entertainment feature of the dinner was music by an accomplished trio. During the banquet, Mrs. Reaves, retiring president, handed the gavel to Mrs. Theodore Morford, of Nashville, president of the State



MRS. THEODORE MORFORD

Auxiliary for 1936-37, with good wishes for success and a pleasant year. Mrs. Morford then presented the following officers who will serve with her:

President-elect, Mrs. W. T. Black, Memphis.

First Vice-President, Mrs. W. R. Cate, Nashville.

Second Vice-President, Mrs. H. E. Christenberry, Knoxville.

Third Vice-President, Mrs. W. S. Lawrence, Memphis.

Recording Secretary, Mrs. W. W. Potter, Knoxville.

Corresponding Secretary, Mrs. B. F. Byrd, Nashville.

Treasurer, Mrs. T. G. Pollard, Nashville.

Historian, Mrs. M. D. Shearer, Jellico Plains.

Parliamentarian, Mrs. W. S. Nash, Knoxville.

Directors

Mrs. Thomas Jennings, Clinton.

Mrs. Ed Thompson, Memphis.

Mrs. J. A. Scott, Murfreesboro.

Mrs. Morford met with the new board on Thursday morning at the post-executive meeting. Plans were made for the year's work.

MEDICAL SOCIETIES

Benton, Carroll, Henry, Weakley Counties:

At the April meeting four Memphis physicians were the speakers. The attendance was good and interesting discussion was given to each of the papers.

H. K. Turley, M.D., talked on "Pyelitis of Pregnancy."

Frank Ward Smythe, M.D., discussed "The Diagnosis of Intestinal Obstruction."

Jas. B. Sanford, M.D., spoke on "Diseases of the Eye Encountered by the General Practitioner."

Conley H. Sanford, M.D., had for his subject, "Modern Trends in the Treatment of Lobar Pneumonia."

Campbell County:

The Campbell County Medical Society met April 30th in the Glanmorgan Hotel in Jellico. Dr. H. Stirl Rule, of Jacksboro, was in charge of the program. Dr. R. B. Howard, Clinton, of the United States Public Health Service and who is in charge of the Anderson-Campbell County Health Unit, read a very interesting paper giving the accepted modern therapy of syphilis. Discussion was opened by Dr. J. L. Heffernan, of Jellico.

Members present were: Drs. J. P. Lind-

sey, G. B. Brown, S. S. Brown, H. Stirl Rule, W. D. Gibson, J. L. Heffernan, S. D. Queen-er, and R. J. Buckman.

Dr. R. B. Howard, the essayist, was a visitor from the Anderson County Medical Society. Dr. Huey, dentist of Jellico, was also a welcome visitor.

R. J. BUCKMAN, M.D., *Secretary*.

Davidson County:

April 21—"Clinical Pathology in Relation to Diagnosis," by Andrew A. Eggston, M.D., New York City.

April 29—David A. Barr, M.D., professor of medicine, Washington University, was in Nashville to give the annual A. O. A. fraternity lecture and was invited to address the academy. He lectured on "Obesity."

May 5—"The Chronicity of Sinus Disease: Its Relation to Middle Ear Infections, Deafness, and Constitutional Diseases," by M. M. Cullom, M.D. Discussed by Eugene Orr, M.D., and Robert Sullivan, M.D.

Case Report—"Rupture of Urinary Bladder without Fracture of Pelvis," by E. L. Rippey, M.D.

Dyer, Lake, and Crockett Counties:

Dyer, Lake, and Crockett County Medical Society met in regular monthly session May 6, 1936.

Scientific program:

1. "Clinical Types of Ascites," Dr. J. Paul Baird, Dyersburg.

2. "Megacolon" (Medical aspect), Dr. D. H. James, Memphis; (Surgical aspect), Dr. Joe Francis, Memphis.

3. "Intestinal Obstruction," Dr. E. G. Kelly, Memphis.

The program was thoroughly enjoyed with a splendid attendance.

Our next meeting will be held Wednesday, June 3, on Reelfoot Lake. There will be fish, fried chicken, and country ham served at Boyett's new place at 6:30 P.M. followed by a good scientific program. Visitors are welcome provided the secretary is notified in advance to make their reservation. Dr. H. H. Shoulders, our hard-working state secretary, will be with us at this meeting.—C. L. DENTON, *Secretary*.

COMMITTEES

The following is a list of the standing committees of the Tennessee State Medical Association provided for in the constitution and by-laws and appointed by the proper authority, together with some special committees appointed under the authority of a resolution by the House of Delegates.

Some of the committees are appointed for a definite period. In such instances the appointment of the committeeman expires with the meeting of the House of Delegates in the year stated opposite his name.

COMMITTEE ON SCIENTIFIC WORK

H. H. Shoulders, Chairman, Nashville.
A. F. Cooper, Memphis.
Frank Harris, Chattanooga.
A. H. Lancaster, Knoxville.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

L. W. Edwards, Chairman, Nashville (1939).
E. W. Cocke, Bolivar (1941).
Battle Malone, Memphis (1940).
Tom Barry, Knoxville (1938).
T. R. Ray, Shelbyville (1937).

LIAISON COMMITTEE

W. C. Dixon, Chairman, Nashville (1941).
W. P. Wood, Knoxville (1940).
Hiram A. Laws, Chattanooga (1939).
Tom Mitchell, Memphis (1938).
J. L. Raulston, Knoxville (1937).

STATE TUBERCULOSIS HOSPITAL COMMISSION

W. S. Rude, Chairman, Ridgeway.
O. N. Bryan, Nashville.
C. M. Oberschmidt, Memphis.
J. L. Hamilton, Chattanooga.

HOSPITAL COMMITTEE

D. R. Pickens, Chairman, Nashville.
E. H. Baird, Dyersburg.
H. Quiggs Fletcher, Chattanooga.
Kyle Copenhaver, Knoxville.
H. B. Everett, Memphis.
Lee Gibson, Johnson City.

COMMITTEE ON INSURANCE

A. F. Cooper, Chairman, Memphis.
C. M. Hamilton, Nashville.
S. R. Miller, Knoxville.

COMMITTEE ON MEDICAL DEFENSE

S. R. Miller, Chairman, Knoxville.
H. B. Everett, Memphis.
H. M. Tigert, Nashville.

ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

Not yet appointed.

SUPERVISORY COMMITTEE

(Representing the Tennessee State Medical Association)

J. R. Reinberger, Memphis.
O. S. Warr, Memphis.
F. B. Bogart, Chattanooga.
J. O. Manier, Nashville.

COMMITTEE ON EDUCATION

O. S. Warr, Chairman, Memphis (1938).
R. B. Wood, Knoxville (1938).
W. G. Kennon, Nashville (1937).
J. Marsh Frere, Chattanooga (1937).
W. O. Baird, Henderson (1939).
J. M. Lee, Nashville (1939).

The following committees are expected to serve under the supervision of the Committee on Education:

(A) COMMITTEE ON MATERNAL WELFARE

J. R. Reinberger, Chairman, Memphis.
M. S. Lewis, Nashville.
H. B. Hewitt, Chattanooga.
Andrew Smith, Knoxville.

(B) COMMITTEE ON CHILD WELFARE

W. D. Anderson, Chairman, Chattanooga.
Oliver Hill, Knoxville.
H. G. Bradley, Nashville.
W. L. Rucks, Memphis.

(C) CANCER COMMITTEE

Ralph Monger, Chairman, Knoxville.
S. J. Sullivan, Cleveland.
Howard King, Nashville.
H. S. Shoulders, Nashville.
J. W. McClaran, Jackson.
Frank Smythe, Memphis.

(D) COMMITTEE ON PHYSICAL THERAPY

A. H. Meyer, Chairman, Memphis.
W. E. Van Order, Chattanooga.
J. F. Hamilton, Memphis.
R. W. Billington, Nashville.
J. P. Gilbert, Nashville.

LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. W. L. Williamson, 915 Madison Avenue, Memphis.
 Vice President for West Tennessee—Dr. J. E. Powers, Jackson.
 Vice President for Middle Tennessee—Dr. J. O. Walker, Franklin.
 Vice President for East Tennessee—Dr. Lee K. Gibson, Johnson City.
 Secretary—Editor—Dr. H. H. Shoulders.
 Assistant Secretary—Editor—Dr. W. M. Hardy.

TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.
 Dr. A. F. Cooper, Goodwyn Institute Building, Memphis.
 Dr. E. R. Zemp, Walnut Street, Knoxville.
 Dr. Franklin B. Bogart, Medical Arts Building, Chattanooga.
 Dr. John B. Steele, Volunteer Building, Chattanooga.

COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.
 Second District—Dr. S. R. Miller, Knoxville.

Third District—Dr. Hiram A. Laws, Jr., Chattanooga.
 Fourth District—Dr. J. T. Moore, Algood.
 Fifth District—Dr. John W. Sutton, Petersburg.
 Sixth District—Dr. L. W. Edwards, Nashville.
 Seventh District—Dr. C. D. Walton, Mt. Pleasant.
 Eighth District—Dr. J. R. Thompson, Jackson.
 Ninth District—Dr. E. H. Baird, Dyersburg.
 Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—

Dr. E. G. Wood, Knoxville; East Tennessee.
 Dr. H. H. Shoulders, Nashville; Middle Tennessee.
 Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—

Dr. E. T. Newell, Chattanooga; East Tennessee.
 Dr. J. O. Manier, Nashville; Middle Tennessee.
 Dr. E. C. Ellett, Memphis; West Tennessee.

OFFICERS OF COUNTY MEDICAL SOCIETIES

COUNTY	PRESIDENT	VICE PRESIDENT	SECRETARY-TREASURER
Anderson	Edward Dickson, Coal Creek	W. B. Barton, Briceville	J. S. Hall, Clinton
Bedford	Alfred Farrar, Shelbyville	J. W. Reed, Belfast	W. H. Avery, Shelbyville
Blount	L. C. Olin, Maryville	H. A. Callaway, Maryville	W. C. Crowder, Maryville
Bradley	J. L. McClary, Cleveland	W. C. Stansberry, Charleston	Claud Taylor, Cleveland
Campbell	A. A. Baird, Pruden	R. Davis, Jellico	R. J. Buckman, LaFollette
Carroll	E. W. Hillsman, Trezevant		J. H. Williams, McKenzie
Carter	E. T. Pearson, Elizabethton	J. B. Shoun, Elizabethton	E. L. Caudell, Elizabethton
Chester, Henderson, and			
Decatur	C. H. Johnson, Lexington	J. L. McMillen, Decaturville	L. C. Smith, Henderson
Cocke	Drew A. Mims, Newport	Chas. Ruble, Newport	J. E. Hampton, Newport
Cumberland	E. W. Mitchell, Crossville		V. L. Lewis, Crossville
Davidson	H. S. Shoulders, Nashville	H. L. Douglas, Nashville	J. P. Gilbert, Nashville
Dickson	L. F. Loggins, Charlotte		R. P. Beasley, Dickson
Dyer, Lake, Crockett	R. C. Newkirk, Tiptonville	John E. Frazier, Newbern (Dyer)	C. L. Denton, Dyersburg
		R. W. Griffin, Tiptonville (Lake)	
Fayette-Hardeman	L. D. McAuley, Oakland	Leon Pope, Grand Junction	A. Richards, Bolivar
Fentress	C. A. Collins, Wilder	A. H. Crouch, Forbus	J. P. Sloan, Jamestown
Franklin	W. F. Smith, Decherd	A. P. Smith, Winchester	John M. Hardy, Sewanee
Gibson	L. H. Montgomery, Trenton	H. P. Clemmer, Milan	F. L. Roberts, Trenton
			Roscoe Faulkner, Ass't Sec., Trenton
Giles	R. E. Warren, Pulaski	J. G. Waldrop, Lewisburg	T. F. Booth, Pulaski
Greene	N. H. Crews, Greeneville	R. S. Cowles, Greeneville	C. P. Fox, Jr., Greeneville
Grundy	U. B. Bowden, Pelham	O. H. Clements, Palmer	T. F. Taylor, Montague
Hamblen	P. L. Henderson, Morristown	P. L. Brock, Morristown	J. F. Campbell, Morristown
Hamilton	D. M. Williams, Chattanooga	E. A. Gilbert, Chattanooga	J. Marsh Frere, Chattanooga
Hasdin, Lawrence, Lewis, Perry, and Wayne	W. E. Boyce, Flatwoods	J. H. Taylor, Morris Chapel (Hardin)	O. H. Williams, Savannah
		J. W. Danley, Lawrenceburg (Lawrence)	
		Paul Wiley, Hohenwald (Lewis)	
		W. E. Turner, Lobelville (Perry)	
		D. L. Woods, Waynesboro (Wayne)	
Haywood	A. H. Sorrell, Brownsville	John C. Thornton, Brownsville	Roy M. Lanier, Brownville
Henry	A. F. Paschall, Puryear	Eloy Scruggs, Paris	R. Graham Fish, Parris
Hickman	L. F. Pritchard, Only	C. V. Stephenson, Centerville	W. K. Edwards, Centerville
Humphreys			W. W. Slayden, Waverly
Jackson	J. D. Quarles, Whitleyville	R. C. Gaw, Gainesboro	F. B. Clark, Gainesboro
Knox	M. S. Roberts, Knoxville	John Smooth, Knoxville	Jesse C. Hill, Knoxville
Lauderdale	Thos. F. Pipkin, Henning	J. H. Nunn, Ripley	Thos. E. Miller, Ripley
Lincoln	H. K. Alexander, Fayetteville	R. E. McCown, Fayetteville	M. F. Brown, Fayetteville
Macon	D. D. Houser, Lafayette	P. East, Lafayette	J. Y. Freeman, Lafayette
Madison	J. C. Pierce, Mercer	John E. Powers, Jackson	S. M. Herron, Jackson
Maury	D. B. Andrews, Columbia	O. C. Fowler, Spring Hill	C. D. Walton, Mt. Pleasant
		H. C. Busby, Columbia	
McMinn			L. A. Brendle, Englewood
McNairy	John R. Smith, Selmer	G. B. Curry, Selmer	H. C. Sanders, Selmer
Monroe	T. M. Roberts, Sweetwater	J. A. Hardin, Sweetwater	W. J. Cameron, Sweetwater
Montgomery	F. A. Martin, Cumberland City	R. M. Workman, Clarksville	Philip L. Lyle, Clarksville
Obion	W. B. Harrison, Union City	Ilar Glover, Union City	Frank B. Kimzey, Union City
Overton			A. B. Qualls, Livingston
Polk	W. Y. Gilliam, Copperhill	W. C. Strauss, Copperhill	F. O. Geisler, Isabella
Putnam	J. Fred Terry, Cookeville	W. A. Howard, Cookeville	Thurman Shipley, Cookeville
Roane	F. D. Owings, Rockwood	T. L. Bowman, Harriman	W. W. Hill, Harriman
Robertson	W. F. Fyke, Springfield	E. W. Adair, Springfield	W. S. Rude, Ridgetop
Rutherford	J. D. Hall, Readyville	B. W. Rawlins, Murfreesboro	J. A. Scott, Murfreesboro
Scott			D. M. Woodward, Winona
Sevier	R. J. Ingle, Sevierville	C. P. Wilson, Sevierville	R. C. Kash, Sevierville
Shelby	Robin F. Mason, Memphis	F. W. Smythe, Memphis	A. F. Cooper, Memphis, Secretary
	O. S. Warr, Memphis, President-Elect		J. J. Hobson, Memphis, Treasurer
Smith	Rhea E. Garrett, Dixon Springs	J. G. Bridges, Gordonsville	Thayer S. Wilson, Gordonsville
Sullivan and Johnson	W. H. Reed, Kingsport	D. D. Vance, Bristol (Sullivan)	T. R. Bowers, Bristol
		R. O. Glenn, Mountain City (Johnson)	
Sumner	C. D. Giles, Gallatin	L. A. Absher, Portland	Harold Kelso, Gallatin
Tipton	A. J. Roby, Covington	L. J. Lindsey, Covington	H. C. Currie, Covington
Warren	John S. Harris, McMinnville	E. L. Mooneyham, Rock Island	John T. Mason, McMinnville
Washington	W. M. Bevis, Johnson City	J. L. Hankins, Johnson City	C. H. Long, Johnson City
Weakley	J. A. Moore, Sharon	G. C. Thomas, Greenfield	P. W. Wilson, Dresden
White	S. E. Gaines, Sparta	Vernon Hutton, Ravenscroft	A. F. Richards, Sparta
Williamson	R. H. Hutcheson, Franklin	Knox Galloway, Franklin	K. S. Howlett, Franklin
Wilson	L. L. Tilley, Lebanon	M. H. Wells, Watertown	R. B. Gaston, Lebanon

Hamilton County:

May 21—"Some of My Favorite Drugs," by W. E. Bryan, M.D. "The Role of Medicine in Shaping History," by Chas. R. Henry, M.D.

May 28—"Hairlip and Cleft Palate," by E. Dunbar Newell, M.D.

June 4—"Recent Trends in Gynecologic Surgery," by Raymond Wallace, M.D. "The Acute Abdomen," by Wm. G. Stephenson, M.D.

Hardin, Lawrence, Lewis, Perry and Wayne Counties:

The meeting of the Five-County Medical Society in Waynesboro, April 28, was held in the County Court room. A good attendance enjoyed a very interesting time.

Invocation was by Rev. L. W. Carlison, Waynesboro.

"The Treatment of Leucorrhea," by T. J. Stockard, M.D., Lawrenceburg. Discussion opened by J. V. Hughes, M.D., Savannah.

"Gall Bladder Disease," by W. J. Tendler, M.D., Memphis. Discussion opened by Frank Norman, M.D., Waynesboro.

"Ureteral Stones and Pyelitis," by B. C. Arnold, M.D., Jackson. Discussion opened by J. T. Keeton, M.D., Clifton.

Knox County:

April 21—"The House of Delegates," by E. R. Zemp, M.D. Discussion was led by Kyle Copenhaver, M.D., and Ralph Monger, M.D.

April 28—"Post-Vaccination Encephalitis," by Gilbert Eblen, M.D. Discussion opened by Oliver Hill, M.D., and Jack Chesney, M.D.

May 5—"Acute Back Injuries," by Jarrell Penn, M.D. Discussion opened by Drs. Waterhouse, Bagwell, and Robt. Petterson.

Washington County:

The Washington County Medical Society held a meeting on May 7. The following papers were read:

"Angioneurotic Edema," by G. J. Sells, M.D. Discussion opened by J. T. McFaddin, M.D.

"Heart Pain," by R. D. Tompkins, M.D. Discussion opened by Drs. Brading and Mackey.

OTHER MEDICAL SOCIETIES**TENNESSEE VALLEY MEDICAL ASSOCIATION
AND POSTGRADUATE ASSEMBLY**

The next meeting will be held in Knoxville, June 10, 11, 12, 1936. A partial list of speakers follows:

Dr. Leon Herman, Philadelphia.
Dr. James E. Paullin, Atlanta.
Dr. M. Hines Roberts, Atlanta.
Dr. Chas. W. Hibbitt, Louisville.
Dr. Walter C. Alvarez, Rochester.
Dr. C. C. Maher, Chicago.
Dr. Boston Haden, Chicago.
Dr. Fred W. Rankin, Lexington.
Dr. R. A. Vonderlehr, Washington.
Dr. James B. McElroy, Memphis.
Dr. James R. McCord, Atlanta.
Dr. Wm. D. Haggard, Nashville.
Dr. James S. McLester, Birmingham.
Dr. Hayes E. Martin, New York.
Dr. Morris Fishbein, Chicago.
Dr. John Musser, New Orleans.
Dr. Claud C. Coleman, Richmond.
Dr. W. L. Williamson, Memphis.

**VANDERBILT UNIVERSITY MEDICAL SOCIETY,
APRIL 3, 1936**

1. "Experimental Studies on Lymphatic Blockage," Alfred Blalock, C. S. Robinson, R. S. Cunningham, and Mary E. Gray.

Clythorax has resulted in more than half of the experiments on dogs and cats in which the superior vena cava was occluded by ligature. Additional experiments were performed in which lymphatic obstruction was produced in a few dogs by direct operative attacks on the large lymph vessels. Complete blockage was accompanied by a loss in weight, a marked diminution in the

lymphocytes and eosinophiles in the blood stream, and death.

Paper discussed by Drs. Garrey, Brooks, Blalock, and Robinson.

2. "The Opsono-Cytophagic, Allergic, and Agglutination Reactions in the Diagnosis of Undulant Fever," Alvin E. Keller, Crit Pharris, and W. H. Gaub.

The results of these observations indicate that the intracutaneous test may be used to determine the state of allergy resulting from *Brucella* infection. This test may be useful in determining the presence of infection with *Brucella* in individual patients or the incidence of this infection in groups of the population. However, the skin test gives no indication of the immunity status of the patient. This may be determined by means of the opsono-cytophagic test. It is possible by the use of the skin test and the opsono-cytophagic test to determine whether individuals are susceptible, infected or immune with regard to undulant fever.

Paper discussed by Drs. Youmans, Leathers, and Chesney.

The annual meeting of the American Association for the Study of Goiter will be held in Chicago, June 8, 9, 10, 1936. For program and other information address W. Blair Mosser, M.D., Corresponding Secretary, Kane, Pennsylvania.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Electrocardiographic Studies During Surgical Anesthesia. C. M. Kurtz, J. H. Bennett, and H. H. Shapiro, *The Journal A. M. A.*, February 8, 1936.

One hundred nine patients were studied during 113 operations whose ages varied from sixteen to seventy-three years. The operations included all the more common surgical procedures. Thirty-one per cent of these patients exhibited some definite cardiac abnormality. Electrocardiographic tracings were taken before, during, and after anesthesia. Also ten hours after operation. Cyclopropane was used in forty-one cases, ether in twenty, procaine in thirteen, ethylene in eleven,

nitrous oxide in ten, vinyl ether in seven, chloroform in six, and tribro-ethanol in five cases. Only twenty-one per cent of this series failed to show some type of cardiac disturbance.

Three general types of arrhythmia predominated. These were extrasystoles of various origins, displaced pacemaker, and sinus arrhythmia. Over seventy per cent of all types of anesthesia caused arrhythmia with the exception of procaine which showed only forty-six per cent changes. All cases of chloroform anesthesia showed changes in the electrocardiographic studies. Only ten per cent of the ether cases escaped. Cyclopropane showed changes in eighty-two per cent of cases.

The depth of anesthesia did not seem to be a factor. Certain procedures such as opening and closing the peritoneum, traction on organs, and thyroidectomy were more commonly associated with irregularities, but on the whole the steps of the operations had little specific relationship. Ten hours after operation there were still certain changes. The author is unable to determine the extent and permanence of these phenomena, but the profound changes shown by the electrocardiogram in the great majority of cases under surgical anesthesia leave no doubt that the heart is directly affected.

DERMATOLOGY

By E. E. BROWN, M.D.
Doctors Building, Nashville

Prevention of Dermatitis Venenata Due to Poison Ivy in Children. Matthew Molitch, M.D., and Samuel Poliakkoff, Jamesburg, N. J., *Archives of Dermatology and Syphilology*, April, 1936.

The tests were carried out under careful supervision at the New Jersey State Home for Boys.

Patch tests were performed and histories taken from 292 who were selected. One hundred boys were tested on one arm with a piece of poison ivy leaf and on the other with a piece of muslin which had previously been moistened in an alcoholic extract of the plant in the dilution of 1/100. In every instance in which the reaction was positive it was the same on both arms. About forty boys were tested with extract in dilutions of 1/500 and 1/1000 and all were negative. A reaction was considered positive when there was vesiculation, erythema, and local itching. It was found that 22.9 per cent had positive reactions. Those with histories of previous attacks gave fifty-nine per cent positive and twenty-three per cent mild reactions. Those who gave a negative history showed 7.3 per cent positive and ten per cent mild reactions.

Forty of the sixty-seven who gave a positive reaction were selected for immunization. None of these immunized cases had ivy poisoning during treatment (weekly injections for twenty weeks). Of the twenty-seven untreated cases, thirteen were

paroled to their home, and of the fourteen that remained through the summer nine developed ivy poisoning and eight of these gave histories of previous attacks.

The authors were of the opinion that immunity lasted for the duration of the time that the injections were given and surely not longer than one year.

NOTE.—I have treated quite a large number of cases and have found that the immunity practically always lasts for a year and sometimes longer. I am also of the opinion that injections of the extract will cut short most cases of ivy poisoning.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 316 Doctors Building, Nashville

Hysterectomy. L. J. Harris, *The Journal of Iowa State Medical Society*, 26: 3, 123-126, March, 1936.

A statistical study of 739 hysterectomies, the most common major operation in gynecologic practice, has been made from the standpoint of morbidity and mortality. Much discussion has been provoked in regard to the respective merits of the abdominal and vaginal technics and this report from the Department of Obstetrics and Gynecology of the University of Iowa Hospitals gives a survey of the results obtained between July 1, 1926, and December 31, 1933.

The total gross mortality was 4.1 per cent or thirty-one deaths. There were 274 subtotal hysterectomies performed with a mortality of 3.6 per cent, while there were 300 abdominal total hysterectomies performed with five per cent mortality. There were 151 vaginal hysterectomies done with two per cent mortality rate. Among fourteen radical (Wertheim) operations there were two deaths or 14.3 per cent mortality.

There was no significant difference in the average number of postoperative days nor in the occurrence of febrile reactions (101 degrees or more), except that in the fourteen radical (Wertheim) abdominal total hysterectomies, all these averages were increased appreciably.

Tables show injuries to neighboring hollow viscera (bladder, bowel, and ureter) were more numerous when total hysterectomy was performed. Wound infections were more common after subtotal hysterectomy.

Total hysterectomy, even when employed as an operation of choice, carried an appreciably higher mortality (four per cent) than did the subtotal operation under similar elective conditions (three per cent).

The Incidence and Treatment of Secondary Anemia in Out-Patient Maternity Patients. Owen J. Toland, A. J. Obs. and Gyn., 31: 4, 640-644, April, 1936.

This is a study from the Lying-In Hospital of Philadelphia, Pennsylvania, answering the problem

of the extent of the obligation of obstetricians to their patients with reference to iron therapy in secondary anemia, placing special emphasis on the use of ferrous sulphate in tablet form. Recent reports in the literature seem to indicate that from the point of view of dosage ferrous sulphate is some ten times as potent in hemoglobin regeneration as iron and ammonium citrate which has generally been accepted as standard.

The author reports 670 cases, all ambulatory, reporting to the prenatal clinic of the Philadelphia Lying-In Hospital. All these new maternity cases reporting to the clinic had blood examinations as described and all patients with a hemoglobin reading of sixty-five per cent or less received iron ammonium citrate (twenty-five per cent solution) or ferrous sulphate tablets. Total dosage with iron ammonium citrate was ninety grains a day and with ferrous sulphate twelve grains a day. A control group was given tablets containing an inert substance.

A total of 670 patients were examined in which there were only sixty-three patients with hemoglobin readings less than sixty-five per cent. Seven of the sixty-three were too late in their pregnancy for observation and twenty-nine refused to cooperate. Of the twenty-six patients left for study four patients had hemoglobin readings of less than fifty-five per cent.

The author found that primary anemia does not occur frequently, there being none in his series, and that grave secondary anemia is relatively infrequent in pregnancy. Ferrous sulphate in one-eighth the dosage is equally as effective as iron ammonium citrate in the treatment of secondary anemia in pregnancy. Adequate dosage for ferrous sulphate is more economical, more convenient for the patient, and better tolerated.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

Argyll-Robertson Sign Persisting Three Years After Herpes Ophthalmicus. P. Hermann, *Archives of Ophthalmology*, April, 1936.

The patient, fifty-eight years old, had periods of severe pain with conjunctival injection, photophobia, and lachrimation. Examination revealed active inflammation of the right eye. The cornea was the site of small interstitial opacities, while the epithelium appeared irregular, stained with fluorescence, and was completely anesthetic. There was a history of a severe attack three years previously, with recurrences thereafter three or four times a year. The pupils were equal and regular and reacted promptly in convergence, but while the left reacted to direct light, the right showed no such reaction. Neither was there a consensual reaction on the affected side. The rarity of the condition is the reason for this report.

PEDIATRICS

By JOHN M. LEE, M.D.

Doctors Building, Nashville

The Prophylaxis of Allergic Disease. Jerome Glaser, M.D., and Daniel B. Landau, M.D., Rochester, N. Y., *The Journal of Pediatrics*, April, 1936.

Next to infection, allergy is probably the most important single etiologic agent in human symptomatology. Marriage between allergic individuals is undesirable since thirty per cent of the offspring develop allergic symptoms where one parent is affected, and if both parents are allergic, ninety per cent of the children develop allergy.

In lower animals, the fetus in utero may be sensitized by food ingested by the pregnant female. It is probable that the same may occur in humans, hence in pregnancy, large or excessive amounts of any food should be avoided. Egg should be avoided in pregnancy since eighty-five per cent of reacting infants show positive skin test to egg, even though they had never ingested egg and may have fed only from the bottle, thereby having no opportunity of becoming sensitized by transmission of egg protein through the mother's breast milk. Mothers should avoid all foods to which they are sensitive both during pregnancy and during lactation.

Though the role of calcium in allergy is not definite, an adequate intake of calcium and vitamin D during pregnancy should be provided.

Cotton or linen clothing, bedding and hangings of the room are less likely to produce allergic reactions than if these items are made from wool or silk. Feather pillows and hair mattresses are best replaced with cotton, kapok or other nonallergic material. The potentially allergic child should have no contact with fur-bearing and feathered animal pets, furred toys, toilet preparations containing orrisroot and powders containing pyrethrum. House dust should be reduced to the minimum.

Food allergy may be manifested by colic and other signs of digestive disturbance, and later eczema or asthma may occur. The various foods given during infancy are fully discussed and substitutes suggested for those which may cause trouble. Changes in the diet should be made promptly and as often as necessary until symptoms are relieved. In an allergic child, new foods should be started with minimal amounts and slowly increased in the hope of building up a tolerance. In some cases, dislike of a child for a food may have an allergic basis, and in such cases substitutes for such a food might well be tried rather than forced feeding of that item.

The administration of immunizations against infections should be most carefully performed in the allergic child. Allergy appears to be initiated in certain cases by infectious diseases.

As the allergic child grows older pollenosis or

"hay fever" may make its appearance and require treatment. Repeated head colds may be allergic in their origin, and prompt treatment may prevent asthma in later life.

The fundamental pathologic physiology of allergy is spasm of smooth muscle and edema, or both, and these may occur in most of the body tissues, therefore "it is not surprising that almost any disease may be simulated by allergy."

SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.

1400 Monroe Avenue, Memphis

The Diagnosis and Treatment of Stones in the Common Bile Duct. Arthur W. Allen, M.D., F.A.C.S., Boston, Mass.

The author reviews the changes in biliary tract surgery, stressing the frequency and importance of exploring the ducts which has increased in the past few years. Among the indications for exploration of the ducts are: (1) Jaundice, whether due to obstruction within or outside the duct. (2) The continuation or recurrence of symptoms after biliary tract surgery. (3) Chills and fever following epigastric pain. (4) Frequent attacks of biliary colic. This symptom is often due to the passage of small stones through the ducts, frequently due to disease of the ducts alone, and occasionally due to a single ball valve stone in the duct. (5) Nausea associated with biliary colic is an important indication of disease of the common duct. (6) Gallstones found in the stools before operation.

Operative signs and symptoms are: (1) Small stones or sand within the gall bladder; (2) palpable stones within the ducts; (3) contracted gall bladder; (4) dilated cystic or common duct; (5) thickening of the head of the pancreas; (6) gall bladder without stones, which may appear normal grossly, but a ball valve stone may be found in the common duct in this type; (7) cholangitis, where the ducts are constricted and full of debris.

The technique of duct exploration consists of exposing the duct, palpating it carefully, removing stones, probing the hepatic ducts and the papilla of Vater, and dilating the papilla gradually to a size just below that of the duct itself with Bakes olive-tipped bougies. The ducts are then irrigated with normal salt solution and a No. 10 F. catheter is sutured in the incision in the duct and brought outside through a stab wound, together with a wick drain placed in the subhepatic space of Morrison. Both are removed on the tenth or twelfth day. The only dangers which might arise from routine instrumental dilatation of the papilla are duodenal reflux and cicatricial contraction of the dilated duct outlet.

From the author's statistics in 1,228 patients operated for biliary tract disease, thirty-two per cent have had the ducts explored and in forty-two

per cent of these, stones were found in the ducts. Forty-two per cent of the duct operations were in patients without a history of jaundice. In this group stones were found in thirty-four per cent.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.

By G. A. WILLIAMSON, JR., M.D.

Medical Building, Knoxville

Bone Syphilis. J. S. Speed, M.D., H. B. Boyd, M. D.,
Southern Medical Journal, April, 1936.

The incidence of bone syphilis is of sufficient frequency to make it important in railway and industrial surgery. Familiarity with these lesions will often prevent errors in diagnosis, and frequently shorten the periods of disability. The exact incidence of bone syphilis is difficult to estimate, as no examination of the skeletal system is usually made without symptoms.

Bone lesions recognized clinically as syphilitic usually occur in the tertiary stage, but may involve the skeletal structures in the primary and secondary stages. The symptoms may be either acute or dull pain. It usually occurs in the secondary stage, but X-ray examination will be negative, as the bony structures are not sufficiently involved to show the change.

Wile and Senear, in a survey of 165 cases of syphilis in the primary or secondary stage, demonstrated evidence of bone or joint involvement in sixty cases. The records at Campbell's Clinic show an estimated incidence of bone syphilis of one and one-half per cent.

The majority of bone lesions in syphilis occur before the fifteenth year, but are not limited to that period.

The bones that lie superficially are the most frequently involved.

Although various types of classifications have been given these lesions, these men believe that the whole process should be classed as syphilitic osteomyelitis, the various pathologic and roentgenologic changes being dependent on the virulence of the infected organism and the resistance of the bones involved. Bones of children are less resistant than those of an adult.

In X-ray there are certain characteristic changes in bone syphilis that appear so frequently that they are almost diagnostic. The earliest changes are a hazy fuzzy appearance to the outline, and a thickening of the shaft. The periosteal line assumes an irregular bumpy contour with early evidence of necrosis and destructive lesions as it progresses, both in the old cortex and in the new-formed bone. Sequestra in syphilis are rare, due to the slow progress of the disease.

Diagnosis of bone syphilis should be made, not by any one agent, but by consideration of the clinical history, of the roentgenologic findings, and of serological tests.

The percentage of patients with positive tests in acquired syphilis with bone lesions is relatively high. In cases where the clinical manifestations and serological tests vary, resorting to antiluetic treatment has almost invariably proven the reliability of the serological test.

By efficient treatment, a rapid decrease in the strength of the Wassermann is found in acquired syphilis of the systemic type. In the tertiary stage, however, fixed Wassermann reactions are more often encountered.

Sufficient data has been collected to show that trauma plays a definite part in the localization of an osseous lesion in bone syphilis. These authors quote an incidence of thirty per cent with trauma in a series of 150 cases of bone syphilis.

Neither clinical or scientific facts substantiate the opinion that bone syphilis has anything to do with delaying the healing of fractures.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

ISSUED MONTHLY, Under Direction of the Trustees

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H. H. SHOULDERS, M.D., Secretary and Editor

W. M. HARDY, M.D., Asst. Secretary-Editor

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Volume XXIX

JUNE, 1936

No. 6

PROCEEDINGS OF THE HOUSE OF DELEGATES, ONE HUNDRED THIRD ANNUAL MEETING, TENNESSEE STATE MEDICAL ASSOCIATION, HOTEL GAYOSO, MEMPHIS, TENNESSEE

APRIL 14, 15, 16, 1936

TUESDAY AFTERNOON SESSION

The opening session of the meeting of the House of Delegates of the Tennessee State Medical Association, held in connection with the One Hundred Third Annual Meeting of the Association, Gayoso Hotel, Memphis, Tennessee, convened at 2:05 o'clock, Dr. E. R. Zemp, Knoxville, Speaker of the House of Delegates, presiding.

Speaker Zemp called the House to order. Secretary Shoulders called the roll of elected certified delegates.

THE SPEAKER: I rule that the roll call as heard, and the ex-presidents and the officers, constitute a quorum present.

COMMITTEES APPOINTED

In order to expedite matters we will appoint the committees at this time.

Credentials Committee—Dr. Ralph Monger, Knoxville; Dr. J. D. Brewer, Dyersburg; Dr. J. O. Walker, Franklin.

Committee on Reports of Officers—Dr. A. F. Cooper, Memphis; Dr. J. C. Pennington, Nashville; Dr. S. J. Sullivan, Cleveland.

Committee on Reports of Committees—Dr. W. P. Wood, Knoxville; Dr. N. S. Shofner, Nashville; Dr. W. R. Blue, Memphis.

Committee on Resolutions—Dr. J. O. Manier, Nashville; Dr. Franklin B. Bogart, Chattanooga; Dr. H. B. Everett, Memphis.

Committee on Amendments to Constitution and By-Laws—Dr. J. Marsh Frere, Chattanooga; Dr. L. W. Edwards, Nashville; Dr. J. R. Thompson, Jackson.

ADOPTION OF MINUTES

Moved by Dr. S. R. Miller, seconded by Dr. H. B. Everett, put to a vote and carried that the minutes of last meeting printed in the August, 1935, issue of the JOURNAL be adopted as published.

The Nominating Committee

A recess was ordered to enable the delegates from the three grand divisions of the state to elect the nominating committee. After recess the personnel of the committee was reported as follows:

East Tennessee—Dr. Ralph H. Monger, Knoxville; Dr. L. E. Dyer, Greeneville; Dr. J. L. Hamilton, Chattanooga.

Middle Tennessee—Dr. J. C. Pennington, Nashville; Dr. Thayer S. Wilson, Gordonsville; Dr. W. S. Rude, Ridgetop.

West Tennessee—Dr. Battle Malone, Memphis; Dr. J. L. Crook, Jackson; Dr. Oscar Baird, Henderson.

TREASURER'S REPORT

Speaker Zemp called for reports of officers beginning with the treasurer. As is customary, Treasurer Hamilton submitted the report of the auditors.

REPORT OF AUDIT FOR YEAR ENDED DECEMBER 31, 1935

*To the Chairman and Board of Directors, Tennessee State Medical Association,
Nashville, Tennessee.*

SIRS:

Pursuant to engagement we have made an audit of the cash receipts and disbursements records of the Tennessee State Medical Association for the year ended December 31, 1935.

The results of our investigation are presented in the accompanying comments on audit and on the exhibit and schedules designated as follows:

Exhibit "A"—Statement of Receipts and Disbursements for the Year Ended December 31, 1935.

Schedule A-1—Cash in Banks.

Schedule A-2—Statement of Receipts by Months for the Year Ended December 31, 1935.

Schedule A-3—Statement of Medical Defense Fund for the Year Ended December 31, 1935.

Schedule A-4—Statement of General Fund for the Year Ended December 31, 1935.

Schedule A-5—Investments as at December 31, 1935.

Comments on Audit

Cash in banks, \$1,877.48. This item represented the cash on deposit on December 31, 1935, with the Third National Bank, Nashville, Tennessee, \$1,533.24, and with the American National Bank, Nashville, Tennessee, \$344.24, as shown by the reconciliations presented on Schedule A-1.

Cash Receipts appearing on the Receipts Register were traced into the depositories and through tests made indicated the proper accounting for receipts.

Cash Disbursements were verified by examination of cancelled checks as to signature and endorsements and by checking the amounts with the entries in the Register. Paid invoices were examined in support of the propriety of disbursements made, excepting as to salaries. Checks for salaries were in each instance properly endorsed and the total salary paid each officer and the bookkeeper are shown on Schedule A-4.

Investments, \$8,725.00. The Association owned on December 31, 1935, First Mortgage Real Estate Notes in the principal amount of \$8,725.00. The individual notes are listed on Schedule A-5 and were inspected by our representative on April 8, 1936, at the American National Bank, where they are held for safekeeping.

General

A Fire Insurance Policy on Office Furniture and Fixtures in the amount of \$500.00 and a Fidelity Bond of \$10,000.00 on the Treasurer, Dr. Charles Marshall Hamilton, were in effect on December 31, 1935, both of which will be subject to renewal in the year 1936.

One-half month's salary was due Dr. H. H. Shoulders in the amount of \$62.50 at December 31, 1935.

Twelve issues of THE JOURNAL OF THE TENNESSEE STATE MEDICAL ASSOCIATION were printed during the year 1935. All of these issues of the JOURNAL were paid for during the year 1935, excepting the December issue, the cost of which was paid in January, 1936, in the amount of \$324.00. It is deemed proper to mention that the December, 1934, JOURNAL was paid for in February, 1935, the amount being \$343.00. There was also paid in

February, 1935, \$72.85, being the balance on October and November, 1934, JOURNALS.

Respectfully submitted,

OSBORN & DUNCAN.

By HILARY H. OSBORN.

Certified Public Accountant.

April 8, 1936.

EXHIBIT "A"

Statement of Receipts and Disbursements for the Year Ended December 31, 1935

RECEIPTS	
Dues	\$6,720.00
Advertising	4,234.97
Interest on Investments	500.27
Payments on Principal of Investments	325.00
Inserts and Cuts	102.50
Exhibit Space	520.00
Miscellaneous	27.34
Total Receipts	\$12,430.08
DISBURSEMENTS	
Medical Defense, Schedule A-3	\$ 249.75
Medical Journal, Schedule A-4	3,821.74
Conventions, Schedule A-4	630.30
Salaries, Schedule A-4	4,950.00
General Expense, etc., Schedule A-4	1,751.43
Total Disbursements	\$11,403.22
Excess of Receipts Over Disbursements	\$1,026.86
Represented by:	
General Fund Balance, 12-31-34	\$ 114.72
Medical Defense Fund Balance, 12-31-34	735.90
Balance in Banks, 12-31-34	\$ 850.62
Balance in Banks, 12-31-35, Schedule A-1	1,877.48
Increase in Bank Balance, Year Ended December 31, 1935	\$1,026.86

SCHEDULE A-1

Cash in Banks December 31, 1935

Balance, American National Bank, Per Bank Statement and Books, 12-31-35	\$ 344.24
Balance, Third National Bank, Per Bank Statement, 12-31-35	1,695.74
Less Outstanding Checks:	
12-31-35, Miss Willard Batey	\$ 62.50
12-31-35, Dr. C. M. Hamilton	100.00
Balance, Per Books, 12-31-35	\$1,533.24
Total Cash in Banks, 12-31-35, Exhibit "A"	\$1,877.48

SCHEDULE A-2

Statement of Receipts by Months for the Year Ended December 31, 1935

Month	Total	Dues	Advertising	Interest on Investments	Payments on Principal of Investments	Miscellaneous
January	\$ 2,861.05	\$2,610.00	\$ 248.05			\$ 3.00
February	1,458.94	1,106.00	352.94			
March	1,661.74	1,164.00	245.11	130.63		122.00
April	1,129.40	454.00	351.40			324.00
May	865.34	192.00	621.34			52.00
June	483.69	88.00	350.69			45.00
July	436.37	140.00	294.37			2.00
August	333.32	28.00	250.32			55.00
September	363.17	36.00	327.17			
October	1,183.53	76.00	410.55	369.64	325	2.34
November	319.42	44.00	275.42			
December	1,334.11	782.00	507.61			44.50
Totals	\$12,430.08	\$6,720.00	\$4,234.97	\$500.27	\$325	\$649.84

SCHEDULE A-3

Statement of Medical Defense Fund for the Year Ended
December 31, 1935

Balance in Fund, 12-31-34-----	\$735.90
DISBURSEMENTS	
1-15-35 S. R. Miller, Clerical Work and Stamps-----	\$ 9.00
3-15-35 S. R. Miller, Clerical Work and Stamps-----	8.25
3-15-35 Taylor and McCannless, Owen vs. Dr. R. A. Purvis and Dr. P. L. Brock--	110.00
12-10-35 S. R. Miller, Clerical Work-----	22.50
12-10-35 A. M. Paine, Bailey vs. Dr. O. H. Yarberr-----	100.00
Total, Exhibit "A"-----	\$249.75
Balance in Fund, 12-31-35-----	\$486.15

SCHEDULE A-4

Statement of General Fund for the Year Ended
December 31, 1935

Balance, December 31, 1934----	\$ 114.72
RECEIPTS	
Dues-----	\$6,720.00
Advertising-----	4,234.97
Interest on Investments-----	500.27
Payments on Principal of Investments-----	325.00
Inserts and Cuts-----	102.50
Exhibit Space-----	520.00
Miscellaneous-----	27.34
Total Receipts-----	\$12,430.08
Balance-----	\$12,544.80
DISBURSEMENTS	
Medical Journal:	
Printing-----	\$3,306.35
Postage-----	276.49
Inserts and Reprints-----	66.00
Cuts and Half-tones-----	172.90
Total-----	\$ 3,821.74
Convention Expense:	
Reporting Service-----	\$ 414.65
Programs and Supplies-----	135.65
Addressing and Mailing Programs-----	48.00
Badges-----	32.00
Total-----	\$ 630.30
Salaries:	
Dr. H. H. Shoulders, Secretary and Editor-----	\$1,500.00
Dr. William Hardy, Assistant Secretary and Editor-----	1,800.00
Miss Willard Batey-----	1,500.00
Dr. C. M. Hamilton, Treasurer-----	150.00
Total-----	\$ 4,950.00
General Expenses, etc.:	
Postage-----	\$ 130.00
Rent-----	746.64
Telephone-----	9.35
Office Supplies-----	163.18
Towel Service-----	12.00
Letter Service-----	32.55
Bond for Treasurer-----	25.00
Accounting Service-----	65.00
Travel (other than convention)-----	160.32
Rent of Safety Deposit Box-----	6.30
Legislative Service-----	81.50
Press Information Bureau-----	6.00
Binding 1934 Journal-----	5.00
Filing Cabinet-----	23.75
Publicity Service-----	25.00
Expense of Delegates to A. M. A. Convention-----	259.84
Total-----	\$ 1,751.43
Total Disbursements-----	\$11,153.47
Balance in General Fund, 12-31-35-----	\$ 1,391.33

SCHEDULE A-5

Investments December 31, 1935

First Mortgage	Real Estate	Notes:	Ext'd	Bal.	Pay'nts	Bal.
			to	12-31-34	1935	12-31-35
Maker	Dated	Due				
S. H. Dillard and wife (now W. G. Farrar and wife)-----	6-1-29	6-1-32	12-1-36	\$2,200	\$ 75	\$2,125
T. J. Hale, Jr., and wife (now P. F. Skelly and wife)-----	9-1-31	9-1-36		4,750	250	4,500
J. H. Horn and wife-----	6-1-29	6-1-32	6-1-40	2,100		2,100
Total Investments 12-31-35-----						\$8,725

The audit was referred to the Committee on Reports of Officers.

REPORT OF THE BOARD OF TRUSTEES

Dr. C. M. Hamilton, chairman, read the report of the board.

REPORT OF BOARD OF TRUSTEES

To the House of Delegates of the Tennessee State Medical Association:

Three meetings of the Board of Trustees were held in 1935.

A meeting was held April 11, 1935, in the assembly room of the Noel Hotel, following the last session of the House of Delegates.

The following were present: C. M. Hamilton, chairman; J. O. Manier, Franklin Bogart, W. L. Williamson, E. R. Zemp, H. H. Shoulders.

Since the most important transaction of business was the appointment of standing committees, and as this should be done with deliberation and forethought, it was deemed advisable to adjourn and reconvene one month later for the appointment of most of the committees. As some of the committees were subordinate to the Committee on Education, it was considered expedient to appoint this committee at this time in order that it could assemble some time in May jointly with members of the trustees and have a voice in appointing subcommittees. Two members from each grand division of the state were appointed.

O. S. Warr, chairman; R. B. Wood, W. G. Kennon, J. Marsh Frere, W. O. Baird, J. M. Lee.

Since there was immediate need for conference, the following were also appointed on a committee to confer with the Tennessee Emergency Relief Administration:

H. H. Shoulders, chairman; T. R. Ray, Theodore Morford, M. S. Roberts, H. B. Everett.

On May 12, 1935, the Board of Trustees reassembled in Room 510, Doctors' Building, Nashville, Tennessee.

The following members were present: C. M. Hamilton, chairman; J. O. Manier, E. R. Zemp, W. L. Williamson, F. B. Bogart, H. H. Shoulders.

The following guests were also present: John B. Steele, president; H. B. Everett, W. M. Hardy.

At this meeting Dr. H. H. Shoulders, chairman of committee to confer with Tennessee Emergency Relief Administration, gave a detailed explanation-

tion of the controversial misunderstanding between this committee and the administration director.

The following committees were appointed:

Committee on Public Policy and Legislation—Dr. Battle Malone, Memphis (five years); Dr. L. W. Edwards, Nashville, chairman (four years); Dr. Tom Barry, Knoxville (three years); Dr. T. R. Ray, Shelbyville (two years); Dr. R. E. Sullivan, Nashville (one year).

Committee on Scientific Work—Dr. H. H. Shoulders, chairman, Nashville; Dr. A. F. Cooper, Memphis; Dr. W. J. Sheridan, Chattanooga; Dr. Jesse C. Hill, Knoxville.

Committee on Education—Dr. O. S. Warr, chairman, Memphis (three years); Dr. R. B. Wood, Knoxville; Dr. W. G. Kennon, Nashville; Dr. J. Marsh Frere, Chattanooga; Dr. W. O. Baird, Henderson; Dr. J. M. Lee, Nashville.

Liaison Committee—Dr. Hiram A. Laws, Chattanooga (five years); Dr. Tom Mitchell, Memphis (four years); Dr. J. L. Raulston, Knoxville; Dr. W. C. Dixon, chairman, Nashville; Dr. W. P. Wood, Knoxville.

State Tuberculosis Hospital Commission—Dr. W. S. Rude, chairman, Ridgetop; Dr. O. N. Bryan, Nashville; Dr. C. M. Oberschmidt, Memphis; Dr. J. L. Hamilton, Chattanooga.

Hospital Committee—Dr. D. R. Pickens, chairman, Nashville; Dr. E. H. Baird, Dyersburg; Dr. B. L. Jacobs, Chattanooga; Dr. Kyle Copenhaver, Knoxville; Dr. J. A. McIntosh, Memphis; Dr. Lee Gibson, Johnson City.

Subcommittees to serve in association with the Committee on Education.

Cancer Committee—Ralph Monger, chairman, Knoxville; S. J. Sullivan, Cleveland; Howard King, Nashville; H. S. Shoulders, Nashville; J. A. McClaran, Jackson; J. A. Crisler, Jr., Memphis.

Committee on Maternal Welfare—J. R. Reinberger, chairman, Memphis; M. S. Lewis, Nashville; Frank Harris, Chattanooga; Andrew Smith, Knoxville.

Committee on Child Welfare—W. D. Anderson, chairman, Chattanooga; Oliver Hill, Knoxville; H. G. Bradley, Nashville; W. R. Blue, Memphis.

The subcommittee of the Board of Trustees was directed to investigate the question of lay press publications of matters related to medicine and was authorized to have a few releases published under medical supervision.

The last meeting of the Board of Trustees was held at the Andrew Johnson Hotel, Knoxville, Tennessee, October 19, 1935, with the following members present: C. M. Hamilton, chairman; J. O. Manier, W. L. Williamson, F. B. Bogart, E. R. Zemp, H. H. Shoulders.

The Board of Trustees approved the Secretary-Editor's report of activities of the association and financial status. After a full and free discussion, a resolution was adopted endorsing the editorials that appeared in the JOURNAL concerning the Tennessee Emergency Relief Administration.

The Secretary-Editor was urged to communicate with County Medical Societies to familiarize them with the proper setup of a new law creating County Boards of Health, and insist on them complying with their requirements as soon as possible.

It was decided to ask Dr. O. S. Warr, chairman of Committee on Education, to appoint a committee on physiotherapy and to direct its activities for the rest of the year.

It was recommended that local societies be requested to contact their representatives in Congress and Senate to obtain their attitude on proposed social legislation affecting the practice of medicine.

During the past year the Secretary-Editor has had many requests from government and health agencies for opinions on public policy which he was not empowered to answer, and since there is no one with authority to whom such matters may be referred, the House of Delegates should take such action that will empower a committee for this purpose.

The House of Delegates may be mindful of making an expression of gratitude to the members of the Board of Health for diligent fulfillment of their duty and to the Commissioner of Health for his wholehearted cooperation and sane counsel. On the other hand, something should be done to instill into the practitioners the importance of their responsibility in this movement that has been fostered by the Board of Health and the State Health Department. They should be urged to be public health-minded and to do everything that is reasonably possible for preventive medicine. Without cooperation the Board of Health will be useless. So far harmony and progress are evident and it is the duty of everyone to see that this movement gains in momentum.

It is very probable that some of the recommendations of the Liaison and Education Committees may entail considerable expense. The House of Delegates might do well to give this question some thought and advise the Board of Trustees accordingly.

An operating plan for Crippled Children's Service that has been provided by the Social Security Bill has been drawn up by the State Health Department for approval by the Children's Bureau at Washington. It is being presented to the House of Delegates for endorsement. The Board of Trustees has considered this document and wishes to recommend its approval.

Respectfully submitted,

C. M. HAMILTON, Chairman.

PLAN FOR CRIPPLED CHILDREN'S SERVICE IN TENNESSEE SUBMITTED TO THE PEDIATRIC SECTION OF TENNESSEE STATE MED- ICAL ASSOCIATION

I

Procedure

1. General Medical Record of Crippled Child.
 - A. How secured.

- a. By mail from parent or other interested person or cooperating agency.
 - b. By field representative after contact with parent or guardian or physician.
 - B. Selection of medical or surgical services.
 - a. By Grand Division. From group of physicians or surgeons within the Grand Division in which the crippled child resides.
 1. *Orthopedists* selected from American Medical Association Directory.
 2. *Surgeons* selected from American Medical Association Directory.
 3. *Other specialists* selected from American Medical Association Directory.
 4. *Medical service* selected from list of legally qualified physicians.
 - b. By rotation. The Crippled Children's Service selects physicians or surgeons by rotating service to individuals listed in American Medical Association Directory if parent or guardian or family physician does not elect to select this service themselves.
 - c. The parent or guardian and family physician or physicians selected by the family are allowed the privilege of selecting physician or surgeon to have active charge of the case.
 - C. Examining clinics.
 - a. How organized.
 1. Under supervision of the State Department of Public Health.
 - b. For what purpose? To give the specialist an opportunity to examine the patient and indicate on orthopedic sheet the treatment indicated.
 - c. How conducted.
 1. By orthopedist or other specialists assisted by Nursing Service and/or by field representative.
 - d. Records. Records are made of the findings of the clinician for the use of the Crippled Children's Service in securing commitment by the county judge to the end that proper treatment indicated by the examiner may be carried into effect.
 - e. Transference of child to designated place of treatment.
 1. By a representative of Crippled Children's Service or other responsible person or cooperating agency.
 - to date of discharge the exact date child is to be discharged from the hospital.
 - D. A representative of the Crippled Children's Service or other responsible agent transfers child from hospital to his or her home, a boarding home or a convalescent home, according to the instructions of the physician or surgeon in charge.
 - E. Upon the return of the child to a parent the responsibility of the Crippled Children's Service ceases except where follow-up treatment is indicated by the physician or surgeon in charge.
 2. Follow-up treatment.
 - A. Home (a, b, c).
 - B. Boarding home (a, b, c).
 - C. Convalescent home.
 - a. By County Health Department Nursing Service.
 - b. By local agencies.
 - c. By field representative.
 3. Discharge of responsibility.
 - A. By medical statement of specialist.
 - B. By child reaching twenty-one years of age with care completed, or other responsible agency assuming the responsibility.
 - C. Notification to county judge that responsibility of Crippled Children's Service ceases.
 4. Compensation.
 - A. The operating surgeon or physician in charge shall submit his bill in triplicate to the Crippled Children's Service. The bill is paid by the Crippled Children's Service after approval and acceptance, provided that if it should become apparent to the Crippled Children's Service that a bill submitted by a physician or surgeon for services to a committed crippled child is out of line with fees ordinarily charged for similar service to persons on a similar economic level, at the place such services are rendered, payment on such bill shall be deferred until it has been reviewed and approved by the Commission.
 5. Rehabilitation.
 - A. Educational Department.
- Report referred to the Committee on Reports of Officers.

SECRETARY-EDITOR'S REPORT

Dr. H. H. Shoulders read his report.

REPORT OF THE SECRETARY-EDITOR FOR THE CALENDAR YEAR 1935

To the House of Delegates of the Tennessee State Medical Association:

I have the honor to submit herewith a brief summary of the activities of the headquarters office for the calendar year 1935.

Membership

At the end of 1935 the membership of the Association was 1,556, which is an increase of fifteen

II

Treatment

1. Hospital. Specialist or physician selects hospital from contract list of approved hospitals.
 - A. Operating specialist selects hospital from contract list.
 - B. Child placed under care of selected surgeon or physician.
- C. Method of discharge.
 - a. Specialist notifies the Commission prior

over the maximum membership for the year 1934. This may be regarded now as about our normal membership.

There are fifty-nine societies, but one society failed to report, *i. e.*, Hawkins County. This society had a membership of four for the year 1934. The failure of this society to function in the year, and the failure of many small societies to function as a medical society should function, serves to emphasize again the importance of combining smaller units so as to form larger units of organization.

We would emphasize the fact that the Tennessee State Medical Association is an association of component units. Each local component unit is autonomous. It determines its own membership within certain limitations fixed by the state constitution and by-laws. The state association then is really a federation of local units. It is proper that this is so, even though it serves to hinder, to some extent, the activities of the headquarters office toward the accomplishment of combinations and toward the increase in membership. The idea then must be sold to the small units and this House can act on the combinations when the smaller units have become convinced of the advantages of combinations.

The only excuse I have for bringing this question up again is that I am thoroughly convinced that such steps are vitally necessary to the proper functioning of organized medicine in Tennessee.

Attention should be called to the fact that problems are arising frequently which call for immediate action on the part of organized medicine. They call for concerted action on the part of organized medicine and such action requires the proper sort of fundamental organization.

Journal

Twelve issues of the JOURNAL have been published, carrying sixty-two special articles, a large number of abstracts, news items calculated to be of interest to the membership at large, news concerning the Woman's Auxiliary, editorials with which you should be familiar, and advertising which conforms to the requirements of the American Medical Association.

We believe that this publication is vital to the interests of organized medicine. We are now convinced that the publication is being read to a greater extent than was ever the case before.

General Duties

Under the head of general duties we might discuss the activities which are carried on in order to keep in touch with national movements, state movements, etc., which vitally affect organized medicine. These activities call for an increased amount of time. It requires time to read literature and digest it. It takes time to answer correspondence. It takes time to hold conferences. We have endeavored to keep in line with the march of organized medicine.

At this moment we feel that attention should be called to the fact that a movement is now on in the state which carries with it possibilities for good and possibilities for evil. The movement is that being carried on in high schools to promote a debate of the subject, "Resolved, That the several states should enact legislation providing for a system of complete medical service available to all citizens at public expense."

We know this subject is to be debated in some high schools and colleges. We do not know just how many schools and colleges will promote the debate. At any rate, it is obviously another effort on the part of the proponents of state medicine in America to at least agitate the subject in such a way as to promote a great deal of conversation and they hope favorable comment.

The American Medical Association has prepared literature which is available for distribution.

We know of no way to approach this matter except through the medium of local medical societies in the counties in which a debate is to be held. The local doctors must become the advisers and consultants of the negative debaters on this question.

We are glad to report that in some of the states in which the debates have been held the negative side has won in a majority of instances, but that is not a satisfactory showing. The fact that the affirmative won at all is disturbing.

The Secretary-Editor made an address on this subject before a lay audience which was favorably commented upon by several capable critics. For this reason it was published in the JOURNAL and reprints were prepared for distribution in the hope that it might be of use to the debaters on the question. These are available without cost.

It would be too time-consuming to mention all the various activities which might come under the general head. This lengthy reference to this one is made at this time in the hope that the delegates present will go back to their counties and see to it that their local societies act as they should.

Finances

An official audit of the books of the Association has been prepared for your inspection.

Attention will be called to a few of the facts brought out in the audit. In the first place, the Tennessee State Medical Association is in sound financial condition notwithstanding almost six years of depression.

Income of the Association from all sources for the year 1935 amounted to \$12,105.08. Our total disbursements amounted to \$11,403.22, which gives an excess of receipts over disbursements of \$701.86.

Our income from advertising was \$4,234.97, which is an increase over the income of the previous year by \$278.03.

At this point it might be of interest to say that an office audit has been made of the books for the first quarter of the year 1936. Its chief features are as follows:

Income from dues, \$6,484.50. Income from advertising, \$1,182.05.

It will be observed that revenue from our two principal sources of income has experienced an increase. Mention should also be made of the fact that our membership on March 31, 1936, was 1,201, as compared with 1,290 on the same day in 1935. This is a reduction of only eighty-nine members.

These particular figures as to membership are mentioned for the reason that the increase in dues from \$4.00 to \$6.00 per year became effective in January, 1936, and any marked loss of membership as a result of this action would appear in the membership by the end of the first quarter of this year.

It is gratifying, of course, to the House to know that the membership has not dropped off to any considerable extent. In fact, it is no greater than the normal variations that take place.

With an increase in gross revenue of the Association it will be possible for the Association to engage in activities which could not even be considered in previous years. For example, it will now be possible for the Association to benefit by obtaining a large amount of money for postgraduate work in rural areas that could not be obtained a year ago for the simple reason we were not in financial position to match the funds on the basis required.

Dr. Warr, as chairman of the Education Committee, doubtless will make reference to plans by the committee which will involve an outlay of money, but it will be a warranted outlay.

It will also be possible to carry out with prudence an action on the part of the House to the effect that committeemen who sacrificed their time in attendance on committee meetings can be compensated at least for the expenses involved.

We are all cognizant of the fact that we are living in different times from those which existed just ten years ago. The citizenship of the United States is becoming increasingly segregated into groups and each group is exerting a political influence, and many times one group will trample underfoot another group in order to accomplish its particular ends. We doctors certainly constitute a group. Our interests, in the main, are the interests of the public. However, this fact is not fully appreciated by the public. At any rate, this does not alter the fact that it is of vital importance that organized medicine in Tennessee be so perfected and so financed that it can meet with emergencies as they arise.

This is a sketchy report. It is made so in order to accomplish brevity. A comprehensive report might bore you with its length.

In conclusion I will state that in my opinion the organized profession in Tennessee is more virile and active in the causes of organized medicine than was ever the case before.

Respectfully submitted,

H. H. SHOULDERS, Secretary-Editor.

April 14, 1936.

Report referred to Committee on Reports of Officers.

COMMITTEE TO CONFER WITH THE TENNESSEE EMERGENCY RELIEF ADMINISTRATION

Dr. H. H. Shoulders read the report of the special committee appointed to confer with the Tennessee Emergency Relief Administration.

REPORT OF SPECIAL COMMITTEE APPOINTED TO CONFER WITH THE TENNESSEE EMERGENCY RELIEF ADMINISTRATION

At the meeting in Nashville last year, the House of Delegates took action creating a special committee to confer with the Tennessee Emergency Relief Administration with respect to the formation of plans and schedules for the administration of medical services to relief clients.

The Board of Trustees was directed to appoint this committee. It did so. The committee is composed of Drs. H. H. Shoulders, chairman; Theodore Morford, Nashville; T. R. Ray, Shelbyville; M. S. Roberts, Knoxville; and H. B. Everett, Memphis.

At this point it is necessary to outline, briefly, the problem with which the committee was called upon to deal.

When the Federal Relief Administration was inaugurated in the state your executive officer was called upon to participate in the formation of plans for administering medical services to relief clients. I immediately called into consultation such other officers of the Association as were available at the moment, including Drs. J. M. Lee, J. O. Manier, W. C. Dixon, and others.

At that time it was our opinion that no officer, or group of officers, of the State Medical Association had the authority to make agreements or commitments with the Relief Administration which would be binding in any degree on local component societies concerning the plans of administration or fees for the services of doctors. Notwithstanding this fact, the relief administration proceeded to adopt the tentative plans thus drawn as their own plans, which, of course, they had a perfect right to do, and furthermore each local society had a perfect right to accept or not accept the plan. In fact, each individual doctor had a perfect right to agree to work under its provisions or not to work under its provisions.

It is well for us to bear in mind that the State Medical Association is an association of local component units and that each unit is recognized as an autonomous component unit.

The original plans thus adopted were not satisfactory. Many complaints were received from doctors over the state. The Relief Administration, under Colonel Simpson, agreed that the plans were not satisfactory at all as demonstrated by their experiences, but still no committee had yet been created by this House of Delegates and clothed with power to represent all of the component units

in the formation of plans and fee schedules for the administration of medical care to relief clients.

On the part of the Relief Administration it was at times alleged that the medical organization did not wish to cooperate. This was never true. We officers felt that our powers were limited and that we did not wish to assume the possession of powers which, as an actual fact, we did not possess.

Just before the meeting of the House last year it became current knowledge, as you will recall, that certain individual members of the medical profession, not officers and not delegated as representative of any group of doctors, were seeking to formulate these policies in behalf of the doctors. As a result of all these conditions it became apparent to the House that a committee should be created and clothed specifically with powers to represent the entire profession in the matters at issue. This action was taken and the committee was formed by the Board of Trustees. At the time this committee was created, steps were already well advanced in the office of the Relief Administration. In fact, we were reliably informed a doctor was drawing a salary on a part-time basis and occupying a desk on part-time basis in the headquarters office of the Tennessee Emergency Relief Administration.

Immediately after the committee was appointed a letter was addressed to Judge Barton Brown advising him of the action taken by this House of Delegates and a request was also made for a conference at an early date. No reply was ever received. A few days later press releases were given out by the Tennessee Emergency Relief Administration attacking the Medical Association. These attacks were so unreasonable and vicious and false that the committee felt called upon to make a reply to these charges in the lay press. This was done. Statements of these actions on the part of the committee have appeared in the JOURNAL from time to time and need not be covered here in detail. A complete file of the work done by this committee is on file subject of course to your inspection. It embraces several hundred letters, reports, etc.

A little later on an effort was made to obtain the endorsement of one member of the committee to the plan that had been drawn by the Relief Administration. This endorsement he failed to give, but in turn requested that the plan be submitted to the committee of the Association for review. This request of his was never complied with. To the contrary the Tennessee Emergency Relief Administration sent its plan to all doctors in the state. The extent to which replies were made we do not know. We do know this, however, that a vast number of doctors who signed the agreement did so under the impression that it was a plan endorsed by the committee of the Association.

A short while later the whole plan for administering relief to the indigent was changed. The unemployables were placed under the State Relief

Administration and employable persons were given employment by some of the Federal Relief Administrations.

The federal employees under the WPA receive no treatment except for injuries received in line of duty and that treatment is rendered under the Federal Compensation Commission.

Relief clients under the State Welfare Commission are receiving whatever medical services the State Welfare Commission sees fit to give and on whatever terms they prescribe and just what these conditions are we do not know, except that we do know that in so far as the City of Nashville is concerned they are referred to the charity agencies that have been in existence right along for medical care.

Your committee feels that we were given a task impossible of performance at the time it was handed to us. In view of this we wish to recommend that this House take action to clothe some group of officers with power to act in such situations before late complications have arisen.

We recommend that the Board of Trustees of the Association be clothed with power to negotiate and to make binding agreements with state and national welfare agencies concerning the delivery of medical services to indigent clients of these agencies.

We recognize that such emergencies that have arisen in the last three years have never existed before. That is to say, such agencies for relief as have been created in this period have never existed before.

We recognize also that the House of Delegates is the legislative body and the policy-fixing body of this Association. We believe also that it is not possible to assemble the whole group when an emergency exists. We believe it appropriate that the Board of Trustees, or Board of Directors, should be clothed with the power to act in the interim.

We have every reason to believe that some new legislation may be enacted at the session of legislature in January, 1937, which will be long before this House assembles again.

The power to act in these emergencies should exist where it can be exercised at a time when definite good can be accomplished.

Respectfully submitted,
H. H. SHOULDERS, Chairman;
THEODORE MORFORD,
T. R. RAY,
M. S. ROBERTS,
H. B. EVERETT,

Committee.

This report was referred to the Committee on Reports of Committees.

STANDING COMMITTEES

Committee on Scientific Work

SECRETARY SHOULDERS: We submit the official program as the evidence of our activity.

May I make an apology and correction of an error that slipped in? Dr. Ralph Monger's name appears on the Board of Trustees, and Dr. Bogart's name should appear.

Committee on Public Policy and Legislation

Report was called for, but deferred until Thursday morning.

Committee on Education

Dr. O. S. Warr read the report.

REPORT OF COMMITTEE ON MEDICAL EDUCATION

Mr. Speaker and Members of the House of Delegates:

At the first meeting of our committee held soon after the last annual session of the State Association it was unanimously agreed that the type of postgraduate instruction most urgently needed was in the field of preventive medicine. In our 1935 reports to this body we stated, "With the organization of our State Health Department our Association has assumed certain definite responsibilities with reference to public health and preventive medicine." Since no subcommittees were appointed for each councillor district as was recommended, arrangements were made with the secretaries of each county or group society to devote at least one program during the year to the subject of immunization and one dealing with the subject of maternal welfare. In providing speakers for these programs we wish to express our grateful appreciation to the Committees on Child Welfare and Maternal Welfare, respectively. Without their aid these programs could not have been arranged. So far as we are aware each county society or group society in West and Middle Tennessee and the most of East Tennessee societies have put on such programs. In some places the public has been invited to these programs with the hope of stimulating more interest in the field of immunization and preventive medicine. We have met our greatest difficulty in East Tennessee. Here there are several small inactive societies which we have not been able to interest. Until better organized it will be impossible for this committee to do any constructive work in these counties.

Quoting again from our 1935 report we said, "Realizing the deplorable conditions now existing in the application of physical therapy and at the suggestion of the Council on Physical Therapy of the American Medical Association your committee recommends and urges the appointment of a special standing committee to be known as the Committee on Physical Therapy, the same to be composed of an internist, a surgeon and orthopedist, a neurologist and a pediatricist." For some reason unknown to us no Committee on Physical Therapy was appointed.

We would urge again the importance of such

a committee. The various healing cults are daily capitalizing on our indifference to this field of therapy.

Your committee has given special study to the problem of postgraduate instruction for the general practitioner. Experience has shown that after being established in general practice few men ever leave their work to go to medical centers for postgraduate study. Therefore, if we are to help these men keep abreast with medical progress some plan must be evolved whereby postgraduate courses can be carried to them. But before there can be an intelligent planning we must first know the particular needs of these men. We must have a diagnosis before discussing the remedy. We, therefore, recommend that as soon as possible a complete survey of the entire state be made with reference to the needs of the general practitioners.

However, there are a few subjects of sufficient universal interest to warrant consideration while awaiting the results of this general survey. Among these is obstetrics. Recognizing this need the Mississippi State Medical Association in January, 1935, inaugurated a postgraduate course in obstetrics which it has offered to every practitioner in the state. Their plan briefly is as follows: they have a staff of three all-time employees, a lecturer, an office secretary, and field organizer. They employ the circuit plan. The field organizer arranges a circuit in each of which he provides for four or five teaching centers. He contacts the doctors and arranges a time and meeting place for the lectures and clinics. The lecturer or instructor, who is an experienced teacher, visits each of these centers once a week for twelve weeks. His entire time is devoted to teaching, holding clinics, and seeing patients in consultation with individual physicians. For the course of twelve lectures and clinics the doctors attending pay a registration fee of three dollars. A budget of \$15,000.00 a year has been provided to carry on this work. Of this amount the State Medical Association contributes \$1,500.00, the State Board of Health \$1,000.00, Tulane Medical School \$500.00, the balance, less registration fees, is provided by the Commonwealth Fund. Dr. Felix Underwood, executive officer of the Mississippi State Board of Health, writes: "This work has been enthusiastically received by Mississippi physicians. The plan is well suited to Mississippi and in the light of our experience so far we would not change it."

This committee has reason to believe that the Commonwealth Fund will support a similar program in Tennessee if organized and conducted like the one now in progress in Mississippi. Therefore, we recommend that such a postgraduate course in obstetrics be established as soon as the necessary funds are available, and that the House of Delegates appropriate \$1,500.00 toward such a fund. Already the Tennessee State Board of Health has made an appropriation of \$1,500.00 for this purpose. We are also assured that Van-

derbilt University will contribute \$500.00, and there is a probability that the trustees of the University of Tennessee will provide a like amount. There is reason to believe that the necessary balance will be provided by the Commonwealth Fund provided an organization is created to handle the work consisting of a minimum of three all-time employees, an instructor who must be a trained and experienced teacher, an office secretary, and a field organizer.

We further recommend that the position of assistant secretary of this Association be made an all-time position effective when arrangements have been completed to inaugurate the proposed post-graduate course in obstetrics; that the duties of this position be enlarged to include that of a field organizer.

Finally, in order to avoid duplication of effort and to insure a unified postgraduate program we recommend a reorganization of the Committee on Medical Education as follows:

We recommend that the committee be reduced from six to three, one from each grand division of the state with the chairman of the following standing committees ex-officio members: Child Welfare, Maternal Welfare, Committee on Cancer, Committee on Physical Therapy, provided you see fit to create such a committee. We also recommend that the Committee on Medical Education be authorized to select such subcommittees as may be found necessary and expedient in carrying on its work.

OTIS S. WARR, Chairman.
J. MARSH FRERE.
R. B. WOOD.
JOHN M. LEE.
W. O. BAIRD.

The report was referred to the Committee on Reports of Committees.

Cancer Committee

Dr. Ralph Monger, Knoxville, read the report of the Cancer Committee.

REPORT OF CANCER COMMITTEE

The report of the Cancer Committee last year recommended an educational program for the control of cancer which was divided into two parts. First, one which would deal with educating the laity, and, second, one in which more stress on the control of cancer would be carried out professionally and in the medical school curriculum. It was suggested that the greatest stress be first put on educating the laity, this to be done by talks before service and other allied clubs, by radio talks, and by the public press as far as possible.

The Cancer Committee has attempted to do this and twenty-five talks have been made before various clubs with the illustrated film strip, "Fight Cancer with Knowledge." Several radio talks have been made and in many instances these have ap-

peared in the newspapers. These talks were well to the point and were written and furnished by the American Society for the Control of Cancer.

Dr. J. W. Cox, southern field representative for the American Society for the Control of Cancer, has been very active and cooperative. He has visited the various members of the Cancer Committee on one or more occasions and always offered splendid ideas.

At a recent visit of Dr. Cox he suggested that each county society appoint a special cancer committee, the functions of this committee to be partly legislative and partly educational. He wishes the committee to have legislative authority because of the growing tendency of the various women's clubs and parent-teacher associations who are trying to put on programs which rightfully belong to or should at least be sponsored by the various medical societies. When one of these clubs wishes to use one of the film strips or other information dealing with cancer control this would be under the direct supervision of the Medical Committee.

In conclusion, we recommend that the cancer program as outlined last year be continued, and that the program continue to expand as much as possible. We also approve the suggestion of Dr. Cox—that each county society appoint a special cancer committee.

Respectfully submitted,
RALPH MONGER, Chairman.
J. W. McCLARAN.
J. A. CRISLER, JR.
HOWARD KING.
H. S. SHOULDERS.
S. J. SULLIVAN.

The report was referred to the Committee on Reports of Committees.

Committee on Child Welfare

The Subcommittee on Child Welfare beg to report, due to the delay in the notification of this committee of their appointment, they have not accomplished as much as could be expected.

The committee has contacted approximately one-third of the counties of the state and has had representatives deliver talks on the control and prevention of contagious diseases in as many of these counties as desired such addresses.

The committee has noted in certain sections marked indifference to the present programs, and would suggest that possibly some more direct contact with the individual practitioners might be of greater benefit.

Respectfully submitted,
(Signed) WM. D. ANDERSON, Chairman,
Subcommittee on Child Welfare.

The report was referred to the Committee on Reports of Committees.

Liaison Committee

Dr. W. C. Dixon, chairman, reported for this committee.

REPORT OF THE LIAISON COMMITTEE

The Liaison Committee has had no complaint filed with it during the past year, and no matter has arisen in connection with public health matters on which it has been consulted by the State Board of Health.

Our interpretation of the action of the House of Delegates last year with reference to the Liaison Committee is that this committee was continued to act as a connecting link between the profession and the State Board of Health and to have an advisory capacity in matters of public health.

Acting on this interpretation we wish to bring to the attention of the House one of the most important public health problems in the state, namely, tuberculosis.

There are 2,500 deaths per year in the state from this disease, and the Board of Health estimates that there are 25,000 cases in the state.

The question of tuberculosis hospitals is agitated from time to time, as a means of handling this disease. In view of the above figures, it is manifestly impossible to provide anything approaching adequate hospital facilities. As a matter of fact, a few hospitals caring for a few hundred cases might be harmful by creating the feeling that adequate provision had been made for handling the disease. Some other approach must be made to the problem.

In recent years it has been shown that many cases of this disease can be satisfactorily handled by collapsing the lung by means of pneumothorax. This is being carried out in some general hospitals where the patients are treated as out-patients after perhaps a few days' hospitalization. Some physicians are carrying out this treatment in the patient's home.

There are many hospitals in the state adequately equipped with X-ray and laboratory facilities to make an accurate diagnosis of tuberculosis, and there are beds available in these hospitals for the short period of hospitalization that is sometimes necessary in this form of treatment. It is realized, of course, that all cases of tuberculosis are not suitable for this treatment and that it has its limitations. However, many open cases can be converted into closed cases, with benefit to the patient and a reduction in the number of people exposed to infection.

We believe if this form of treatment were in more general use it would be a definite step forward in the handling of this disease.

With these facts in mind we wish to recommend to the House of Delegates that the Education Committee be requested to arrange for short courses in the diagnosis and handling of tuberculosis at points in the state where facilities are available, these courses to be open to any member of the State Society who cares to attend. We believe that those men experienced in handling this disease would gladly give their services for such courses. The small expense necessary for print-

ing and postage could be paid from the funds of the State Society.

As an example of what can be accomplished, in a general hospital, treating such cases as out-patients, the Nashville General Hospital Chest Clinic may be cited. In two years this clinic has had under treatment 200 cases of pulmonary tuberculosis. Many were in an advanced stage of the disease. Between forty and fifty cases were suitable for pneumothorax and are being successfully treated by this means. The percentage of early cases being found and treated is increasing so that in the future it is reasonable to expect a larger percentage of cases suitable for pneumothorax.

These patients were of the average social and economic status of charity patients of a general hospital. They were treated as ambulatory out-patients after an average hospital stay of one week.

It is reasonable to suppose that in private practice a larger number of cases suitable for pneumothorax would be found, with a corresponding increase in the number of open cases converted into closed cases, a lessening in the number of contacts and great benefit to the individual patient.

If the House of Delegates should act favorably on this recommendation, we feel that they should specify that such courses are definitely a part of the educational program of the State Society.

Institutions should receive credit for participating, but, in our judgment, control of such courses if established should remain in the hands of the Education Committee of the State Society.

The report was referred to the Committee on Reports of Committees.

State Tuberculosis Hospital Commission

Report was read by Dr. W. S. Rude.

House of Delegates, Tennessee State Medical Association:

GENTLEMEN:

While the State Tuberculosis Hospital Commission has not met for the transaction of any business, the chairman of this committee has contacted a majority of the members in an effort to formulate some kind of report for the House.

The Department of Public Health figures show there were 2,390 deaths from tuberculosis (all forms) in 1935, which gives a death rate of 85.6 per 100,000 population. Of the above number, 1,576 were white and 813 colored, with death rates 69.5 and 165.5 in the white and colored groups, respectively.

The Tuberculosis Hospital Commission has not been active in promoting any legislation for the construction of tuberculosis hospitals during the next two years because:

1. It would be impossible to inaugurate a reasonably adequate hospitalization program on account of finances.

2. Existing county institutions in the larger population centers with health units in the smaller centers and an increasing willingness on the part of general hospitals to admit tuberculous patients for chest surgery and other collapse therapy seems to be giving better service in the field of tuberculosis than could be given by a few state institutions.

W. S. RUDE, Chairman.

Report referred to Committee on Reports of Committees.

Hospital Committee

Report made by Dr. D. R. Pickens, chairman.

REPORT OF HOSPITAL COMMITTEE

Your committee has not had anything referred to it during the year, therefore has nothing to report. However, there are three things that your chairman wishes to bring before you for consideration:

1. Group hospitalization.
2. Individual hospital insurance.
3. Hospitals practicing medicine.

Plans have been spreading rapidly during the last few years as an effort on the part of hospitals to collect full payment for the hospitalization of people of low income groups who in the past have been and in the future will otherwise be unable to pay their hospital costs. This effort has been accentuated by the recent increase in the numbers of such cases combined with a great reduction in hospital income from endowment funds and public contributions.

Hospital insurance as an economic device now exists more or less throughout the nation. The American Hospital Association and various state hospital associations are actively promulgating it.

Whether the scheme is or is not financially or economically sound is not the problem of our organization but it is our business to see that the furnishing of medical service is not included in the sale of insured hospital accommodations. This can be done if a strong stand is taken and maintained by the organized medical profession, which must keep a watchful eye to see that medical care is not initially or later included when the usual sales efforts demand increased benefits to purchasers. (A. M. A. Judicial Council.)

It is well known that at the present time, independently of the hospital insurance movement, various hospitals are invading the field of the practice of medicine. This movement should be studied closely by our organization, as it may require some action in the near future.

We all know of municipal and other hospitals that admit patients who are cared for by the residents who are not allowed to charge for services, and the patients are well able to pay a small or reasonable fee. There should be some way to correct at least some of this. However, no matter how careful one may be an occasional case will get

by, as such citizens will go to any extreme to save the expense of hospitalization and medical service.

D. R. PICKENS, Chairman, Nashville;

E. H. BAIRD, Dyersburg;

B. L. JACOBS, Chattanooga;

KYLE COPENHAVER, Knoxville;

J. A. MCINTOSH, Memphis;

LEE GIBSON, Johnson City.

Referred to Committee on Reports of Committees.

Advisory Committee to the Woman's Auxiliary

In the absence of the chairman, Dr. O. W. Hill, Dr. H. H. Shoulders read a report signed by Mrs. R. G. Reaves, president of the Woman's Auxiliary.

REPORT TO ADVISORY COUNCIL

The Woman's Auxiliary to the Tennessee State Medical Association ends the year with seven counties organized and active, namely, Anderson, Blount, Davidson, Knox, Monroe, Rutherford, and Shelby. The total paid membership is 211.

The work of the auxiliary falls under the divisions: Health Education, Public Relations, Philanthropy, and Social. During the past year health education has been stressed in each auxiliary.

The American Medical Association has requested all auxiliaries to assist in increasing the circulation and reading of *Hygeia*. Tennessee members have secured almost 100 subscriptions during the year. A number of subscriptions have been placed in the public schools for use of the health teachers. One auxiliary now has on a campaign to have each doctor place *Hygeia* on the table of his waiting room.

Each auxiliary has helped publicize the American Medical Association's Tuesday afternoon radio program. Innumerable announcements have been made before parent-teacher groups and women's clubs. The monthly printed program has been distributed to persons interested in health.

During the time the State Congress of Parents and Teachers is in session in Knoxville this month, the Knox County Auxiliary will display the American Medical Association's exhibit on harmful cosmetics.

One auxiliary has sponsored a prenatal instruction class for indigent patients in a city hospital. Another held a public relations meeting to which all women's organizations in the county were invited. Dr. W. W. Bauer of the *A. M. A. Journal* spoke to this group on "Health Education versus Health Racketeering." Dr. Bauer also spoke to 1,000 high school students in a meeting arranged by the auxiliary. A third auxiliary was instrumental in having the American Medical Association's literature on Social Medicine placed in the hands of two college debating teams.

Every school principal in Shelby County was mailed a circular letter informing him of the literature compiled by the American Medical Association, and suitable for health plays, debating

teams, and essayists. We would like to train the young generation to look to the medical profession for health information. This auxiliary also sold fifty sets of the pamphlets on "Sex Education" published by the A. M. A. to interested mothers.

Under philanthropy we have reported such items as \$50.00 worth of cod-liver oil contributed to undernourished children; \$11.00 contributed to a rehabilitation fund for the blind; assisting a scout troop of underprivileged girls; a loan closet of linen and medical supplies for a county health unit; antituberculosis work; transportation of needy patients to clinics; a \$4,000 scholarship fund for the use of deserving medical students; and toys for children in the charity wards of hospitals at Christmas time.

Every auxiliary has a social hour following its monthly business meeting, and one or more social functions with the doctors during the year. Mingling with those who have common problems and common experiences contributes to fellowship, friendship, and happiness.

In closing, may I express to the Advisory Council the thanks of the auxiliary for the courtesy and advice tendered us during the year.

MRS. R. G. REAVES, President.

Referred to Committee on Reports of Committees.

Committee on Maternal Welfare

Dr. J. R. Reinberger, chairman, reported for the committee.

REPORT ON MATERNAL WELFARE COMMITTEE

To the Members of the House of Delegates of the Tennessee State Medical Association:

Evidence of state-wide interest in the problem of infant and maternal welfare was manifested by the appointment of a temporary Committee on Maternal Welfare by your past president, Dr. J. O. Manier, in February, 1935. This committee's initial activity was to awaken and stimulate interest in improving the practice of obstetrics by stressing the importance of improved prenatal, delivery, and postnatal care for both mother and baby. In order to conform more with the activities of the American Committee on Maternal Welfare, your chairman communicated with Dr. Fred L. Adair, inviting suggestions for an immediate approach that would be in unison with his nationwide plan.

Last year you correlated all health educational activities under an educational committee. A maternal welfare committee was created as one of its subdivisions and a permanent state maternal welfare committee was appointed. This includes Chairman James R. Reinberger Memphis; Committeemen Milton S. Lewis, Nashville; Frank Harris, Chattanooga; and Andrew Smith, Knoxville.

This committee appreciated the objective of the American Committee on Maternal Welfare and adopted its initial articles of incorporation as its working basis. The purpose is as follows:

"To awaken and stimulate interest of members of the medical profession in cooperating with public and private agencies for the protection of the health of mothers and their offspring before and during pregnancy and labor, and after confinement, to the end that the conditions which menace and interfere with the health or life of the mother or the infant may be improved or prevented, and disease and disorder corrected and prevented, health promoted and life saved; to teach the principles and practice of general and personal hygiene and health to parents; to improve and generalize the standards and methods of training physicians, nurses, and others dealing with the problem of maternity; to study and promote the study of the problem involved in achieving the foregoing objects."

Since its inception your committee has been in almost constant communication. The progress of its activities has apparently been slow. Prudence was absolutely essential, for even the American Committee on Maternal Welfare could only suggest in generality any means of approach. Increasing interest of the members of this committee signifies that a concerted effort is being made to surmount the problem. The best avenue of approach to the solution of the problem cannot at present be definitely established; for in every state all sorts of experiment plans are being tried. It is hoped that from trial and error in methods used in every state that a definite, uniform plan of approach can be established.

Your chairman as a representative from the Central Association of Obstetricians and Gynecologists and from your own state committee attended the annual meeting of the American Committee on Maternal Welfare held in Atlantic City last June. He came away more than ever convinced that every state had to work out its individual problem. He was gratified that the initial state-wide survey of this committee for actually learning the true cause of maternal and infant deaths was the first fundamental problem. Without such knowledge little could be accomplished. This survey has been well under way since the first part of 1935 and bids fair to be not only enlightening but actual fact-finding. The committee agreed to conform to the method of survey used in the study of maternal deaths in Memphis and Shelby County for the past few years. Thus, much time has been consumed in the beginning of the correspondence and graphs in clarifying the details of the survey.

The state was divided for study into four geographical divisions with Memphis, Knoxville, Chattanooga, and Nashville used as a nucleus of this survey. The adjacent sections of these main key points of study were mutually divided between the committeemen so that in the future all counties could be covered in a similar way. Each committeeman assumed the responsibility for the collection of the data, not only for his own city, but from that of adjacent counties. It was soon

apparent that smaller geographical subdivisions would be necessary so as to permit more intimate contact with those responsible for the study of the counties. Your chairman requested that additional committeemen be appointed so that at present all counties in the state are divided into eight geographical divisions. The Nashville section is represented by Milton S. Lewis; Knoxville by Andrew Smith; Chattanooga by Frank Harris; Johnson City by C. W. Friberg; Jackson by John Powers; Union City by W. B. Harrison; Lawrenceburg by V. H. Crowder; and Memphis by James R. Reinberger.

The number of deaths studied in each subdivision was obtained from local, city, and county officials. Information relative to place, cause of death, etc., obtained from death certificates, was verified personally by the committeemen from the study of hospital records and personal communication with those that attended the deceased. A comparison of the information as given on the death certificate with that obtained from hospital records and personal communications revealed the fallacy of the information as reported to state and federal authorities. It is evident that physicians must be more careful in the filling out of such certificates and that supplementary information having definite bearing upon maternal deaths will have to be attached.

This study revealed that about one-third of all so termed maternal deaths resulted from abortion and its complications. Such deaths cannot be actually separated as not being a part of pregnancy and complications; but it certainly has no relationship to the quality of medical care at the time of delivery. It is not within the province of this report to discuss the etiology of abortions, but certainly the increase of criminal abortions is apparent to anyone interested in this problem. It is suggested, however, that information relative to the dangers of such complications of abortion should be widely disseminated to the public. About fifty per cent of all maternal deaths in larger cities came from rural communities and apparently were rushed to hospitals as a last resort, either before or after delivery. The majority of such deaths from rural sections had received no prenatal supervision. Another astonishing fact was that about seventy per cent of all deaths, particularly in those from rural sections, occurred in charity patients. This is in contrast to the small number of deaths occurring in larger numbers of charity patients cared for in cities. Thus, it is almost conclusive that the lack of knowledge of the necessity of good care or the inability to provide better medical attention was the paramount issue.

It is fairly well known that in many communities much of the obstetrical practice is done by the midwife. It is felt that the standard of this practice must be elevated, for at the present time no substitute for their service can be offered as

has been accomplished in cities through free hospital clinics. Since everyone practicing the art of healing is measured by certain standards, it is imperative that your State Society should foster some definite educational program demanding certain requirements for the midwife. Rural communities will have to interest themselves more in providing prenatal centers for supervision and more adequate care for those unable to pay for private medical services. A closer analysis of the deaths surrounding each large community reveals that there are certain areas more accountable for deaths than others. Your committee hopes to stimulate a more intensive educational program to both laymen and physicians in these sections.

It is obvious that the already accepted knowledge of obstetrical practice is not being generally employed by physicians; for too many patients die from preventable causes, such as infection, toxemia, and hemorrhage. Your committee appreciates the significance of improving the practice of obstetrics, but realizes in a country that requires so few cases to graduate from medical school and that offers no opportunity for postgraduate study to those already in practice, it is essential that some sort of postgraduate obstetrical course should be inaugurated.

Representatives of this committee have already visited and given many papers on obstetrical subjects before county medical societies. It is hoped that more counties will avail themselves of this opportunity by cooperating with us. It is hoped if funds are not available for an almost postgraduate obstetrical program that obstetrical seminars can be carried out in larger medical centers as has been done in Shelby County for the past four years. It has been suggested that each county medical society devote more of its programs to the problem of maternal welfare. We have asked that each year the May meeting of every county medical society be dedicated to a full program of maternal and infant welfare subjects in commemoration of "Mother's Day."

It was hoped that a composite study of the end results of our survey could be included in this report. Unfortunately, many of our reports came in too late for a more thorough analysis. We beg that you permit us to present the end results of this survey in writing to you individually or as a part of your State Medical Journal at some future date.

The secretaries of all county medical societies have been asked to appoint maternal welfare committees. While this program has taken considerable time, such committees have been appointed in Shelby, Dyer, Lake, Crockett, Bedford, Gibson, Robertson, Wilson, Hardin, Lawrence, Lewis, Perry, Wayne, Giles, Rutherford, and Sumner Counties. Communications from many secretaries of other county medical societies report that they will present the names of such appointees at the annual meeting of the Maternal Welfare Com-

mittee to be held April 15, 1936. It appears that within a very short time almost every county in the state will have a maternal welfare committee.

Stimulation and cooperation of cities, counties, state officials, and communities as a whole are essential for the provision of funds necessary for the solution of this problem. The medical profession can awaken interest only by pointing out the general inadequacy of medical care and demonstrating the feasibility of methods for improving maternal care. Representatives of this committee have already attempted to stimulate interest by addressing joint meetings of physicians and lay organizations in many communities. It is hoped that the medical profession will join hands with lay organizations to form a health committee in every community interested in the advancement in education and care of maternity cases.

Federal funds under the Social Security Act may soon be available for the education and improvement of care to mothers and infants. Proper coordination of all organizations may be the only means of placing your state in a position to be the recipient of such funds. The State Medical Society should foster any immediate movement necessary to make application to the federal government at the earliest possible moment.

It is essential for this committee and representatives from every county medical society to meet annually for the discussion of its future activities. The first annual meeting of this committee will be held April 15. Seventy-six invitations have been sent out, and to date the response to attend is far above anything expected. Thus, it seems that the desire for better maternal and infant welfare has been received with enthusiasm by the profession.

Summary

1. The problem of maternal welfare is primarily a medical one, at least, for the finding of the true status of maternal deaths in the state. The profession and your State Medical Society must interest itself sufficiently in obtaining this objective.

2. The profession must give more adequate information on death certificates. A supplementary form with more data relative to maternity cases should be appended to each death certificate.

3. Your Medical Society should sponsor a movement to provide better postgraduate, obstetrical courses to physicians already in practice.

4. Your State Medical Society should sponsor a movement of educational courses for the midwife and the revoking of licenses of those who do not come up to the standard.

5. Funds are absolutely essential for the carrying out of this program, and must come from city, county, and state sources. Your State Medical Society should sponsor a more generalized educational program to the layman in order to bring about the availability of such funds.

6. Your State Society should seek cooperation of all organizations necessary to receive funds

when made available under the Social Security Act.

7. The program of educating those responsible for the high maternal death rate will consume considerable time and can only be accomplished by concerted effort on the part of physicians and communities.

8. The *Committee on Maternal Welfare* shall serve without compensation, except the expenses of the committee necessary for the performances of its duty, which shall be paid by the treasurer of the Association upon certification of the chairman, and also the actual expenses of any member called upon to appear before different societies for educational purposes.

Respectfully submitted,

JAMES R. REINBERGER.

MILTON S. LEWIS.

ANDREW SMITH.

FRANK HARRIS.

C. W. FRIBERG.

JOHN POWERS.

W. B. HARRISON.

V. H. CROWDER.

Report referred to Committee on Reports of Committees.

Committee on Medical Defense

Dr. S. R. Miller read the report of the committee.

MEDICAL DEFENSE COMMITTEE

House of Delegates of the Tennessee State Medical Association:

GENTLEMEN:

We herewith submit our twenty-second annual report of your Medical Defense Committee's work for the last twelve months.

Our last report showed four suits on docket, two forced nonsuits, yet potential suits; one voluntary nonsuit, subject to renewal; and one directed verdict, subject to appeal.

Some other suits were pending, but were being defended by reliable insurance companies, and we were not participating, except to offer our moral support.

One new suit was refused for nonpayment of dues at the time of the alleged malpractice.

One new suit is entitled to defense by us, but is being defended by an able and active insurance company.

Of these ten suits we report as follows: Two forced nonsuits have been refiled, one took an agreed nonsuit on defendant's payment of \$11.50 on some special cost. One case the plaintiff was called out, and the suit dismissed.

Two were reported definitely dropped from the docket—one in federal court. Two nonsuits have not been refiled and have not passed the statute of limitation for refiled same.

One suit against a member entitled to our defense had two mistrials, and at the third a judgment of \$2,000.00, but the judge set the judgment

aside and dismissed the suit. We understood his reason was the judgment was not supported by the facts in the suit.

We, therefore, have three suits pending, and we are actively defending only one of these.

Many times the financial condition of this committee's work has been discussed in this House. Some have felt that we would soon wreck the Association financially. One good and very dependable member said he knew enough of lawsuits to know the committee could not finish their work with less than a thousand dollars in addition to their regular fund. Your committee could never give definite figures as to the expense of completing our work, but some of you will recall we stated we believe it could be finished on approximately our defense fund balance, if we could be allowed to use our discretion in employing associate counsel, and we felt reasonably sure it could be completed within two or three hundred dollars deficit, or balance, and we believed it would be a balance and not a deficit.

The treasurer's report should show our financial condition at this time.

S. R. MILLER.

H. B. EVERETT.

Report referred to Committee on Reports of Committees.

Dr. S. R. Miller read the following resolution which was referred to the Committee on Resolutions.

RESOLUTION OFFERED BY DR. S. R. MILLER

Whereas, the Tennessee State Medical Association has now defended its members in suits for alleged malpractice for the last twenty-two years, and has accumulated much information concerning their cause, the method of defense, the cost and the effect on the doctors, the plaintiffs, and the people as a whole.

Resolved, That we express to the legal profession, through the Tennessee Bar Association, our appreciation of the services and the cordial feeling of that learned profession for our members in these usually unjust suits and particularly those members of the legal profession who have so cordially and efficiently defended our suits.

We also appreciate the friendship and loyalty of those leading and outstanding men who refused to take suits against respectable, ethical members of our Association.

These suits have cost our Association almost twenty thousand dollars and have cost the state and the various counties probably considerably more than that amount.

Ninety per cent or fifteen of each sixteen suits were filed on pauper's oath and were an expense to the county, notwithstanding the fact that judgments have been rendered against defendants in less than three per cent of suits, and two or more of these judgments were due to false testimony and sympathetic jury. However, we realize that

some counsel have taken cases against our members in sheer desperation with the hope that they might collect something by way of compromise upon the theory that every case has a nuisance value.

The large majority of the legal profession have been sympathetic with our effort and most friendly to our membership as a whole. We realize that we are not perfect and cannot always attain our ideals or even our hopes, but our members are better than average and almost universally endeavor to serve our clientele to the best of our ability.

We appreciate the cordial brotherly conduct accorded us by the legal profession of our state.

UNFINISHED BUSINESS

Amendment to the Constitution

Under the head of *unfinished business* the *Amendment to the Constitution* was taken up. Last year an amendment was proposed to Article VIII, Section 6. The article now reads: "No delegate and no member who has not been a member in good standing for five years next preceding the election, or who is not in attendance at the meeting, shall be eligible for election as president or vice-president."

The proposed amendment deletes three words, "No delegate and" from the beginning of the section. Having been proposed last year, a vote was called for. After discussion it was moved, seconded and carried that the proposed amendment be approved.

NEW BUSINESS

Amendment to the By-Laws

Dr. A. F. Cooper proposed the following amendment to the by-laws:

"It is hereby moved to amend Chapter VIII of the By-Laws by providing for a Committee on Insurance as follows:

"The Committee on Insurance shall consist of three members, one from East, one from Middle, and one from West Tennessee, to be elected by the trustees of the Association. One member shall be elected for one year, one for two years, and one for three years, and a vacancy shall be filled for any unexpired term that might occur by the Board of Trustees at any annual session.

"It shall be the duty of this committee to attend to all group insurance in which this Association is or may become interested. It shall have power to select insuring companies, accept or reject master policies, arrange premium rates, and act as trustees for this Association in the matter of such group insurance.

"The committee shall elect one of its members chairman. He shall report to the House of Delegates at each annual session upon the activities of the committee during the preceding year. All necessary expenses of the committee in the performance of its duties shall be paid by the treas-

ury of this Association upon certification of the expenses by the chairman of the committee, but this shall not apply to attendance at meetings held at the annual session."

This matter was referred to the Committee on Amendments to the Constitution and By-Laws.

REPORT OF COUNCILORS

Statistical data from all reporting counties are tabulated below. In cases where there is no county report, the councilor did not receive the information from the county. Most of the councilors made reports in addition to the tabulated data.

First District—Dr. L. E. Dyer, Councilor

"I noticed our Secretary-Editor reported this afternoon that Hawkins County, which is in the First District, had not reported. Hawkins County is not organized. They adjoin my home county. We have a plan at this next meeting, in May, to have a speaker from the closest medical school in the state, which happens to be Vanderbilt. We want to invite outstanding men from the university for our May meeting and invite all the doctors in the adjoining counties just as a special effort to awaken and stimulate an interest in medical societies. We hope we can get Hawkins County and probably others to come over to our meeting. Hawkins County is just a short distance from us, and the doctors have been invited at different times to our meetings. If we could include Hawkins County with Greene County, that would take care of that situation. And that might be done in the case of other counties. Our idea is to stimulate the tenure, either with some close-by medical society or perhaps to organize one of their own."

Second District—Dr. S. R. Miller, Councilor

"The Second Councilor District has made no material change since our last annual report. The organized counties have done their usual work during the year. Knox County and Blount County have done excellent work. From the standpoint of attendance and scientific programs, the counties with the smaller memberships have functioned. They have their regular programs, with nine, ten, eleven, as a rule, and that is about the best they can do.

"Eleven members have been lost by death or were dropped from the roll on account of non-payment of dues. I think five have died. Fifteen new members have been added, thus showing a gain of four members. The reports of the secretaries show twenty-nine physicians eligible for membership in the districts. A good many of those men have been contacted, but they are just indifferent. The councilor's principal effort during the last year has been trying to get members in nonorganized societies to join other societies, in combining societies, right along the line of our secretary's recommendation. But it is like Sherman said, 'East Tennesseans can be led, but the

devil himself cannot drive them.' The House of Delegates authorized the councilors to combine counties. I have had them meet together for three or four months during the summer, but cannot get them to combine.

"Persistent effort has been made by correspondence and by personal contact to get the members in the nonorganized counties to join an adjacent county society, but almost all of these men are totally indifferent in the matter. Why good men and leaders in their section should be so indifferent to matters of such vital importance to them, I am not able to understand, but such is true."

Third District—Dr. Hiram A. Laws, Jr., Councilor

"The counties for the Third Councilor District are Bledsoe, Franklin, Hamilton, Meigs, Sequatchie, Warren, Bradley, Grundy, Marion, Monroe, Polk, Van Buren, and White. There is quite a number of these small counties that have only one or two physicians. But for the ones I did hear from—the number of members in the societies in the district are 155; number of physicians residing in the district, 230 white, 16 colored; number of physicians eligible for membership who are not members of the societies, 29; number of new members during the year, 10; number of members who died during the year, two; number of members dropped from the membership roll, four; number of meetings of societies during the year, 77; average attendance at meetings, 13; number of scientific papers read, 93."

Fifth District—Dr. J. W. Sutton, Councilor

"The societies that I represent are holding on well and are increasing their membership so I will not take the time to read the report. It is just the same. Coffee County and Marshall County are not functioning, and we have no report from them. Lincoln County has organized and is functioning splendidly and is continuing its membership. I believe that is all."

Sixth District—Dr. L. W. Edwards, Councilor

"I have reports from Davidson, Robertson, and Montgomery Counties. These counties maintain active societies with regular meetings throughout the year as designated.

"There is only one county in this district that does not maintain an active organization and that is Cheatham County, but the doctors of this county maintain membership in either Robertson or Montgomery Counties. In this way all the physicians in this district have the privilege of attending active societies."

Eighth District—Dr. J. R. Thompson, Jr., Councilor

"The Eighth District is composed of Chester, Decatur, Henderson, Carroll, Henry, Fayette-Hardeman, McNairy, and Madison County Societies. We have ninety-three members. I do

not know the total number of those eligible not members. We have five new members to report. Four have died. I might add, for Madison County particularly, along the line of the increased dues, this is the first time in the last six years that on the thirty-first of March every member had paid except two, and we had three new members. We had more than we had a year ago, even with the increase in dues.

"All societies are active and hold regular scientific meetings except McNairy, which county we have asked to join any one of three different counties or group of counties there, but which at the present time have not decided just where they want to land."

Tenth District—Dr. W. Britt Burns, Councillor

"We had at the close of 1935 335 members. We have at this time 288 members. Our membership includes nine veterans and fifteen associate members. We have 500 doctors in the county, including hospital internes. We have eligible for membership in the society, not members, about sixty, of which perhaps fifty will join during the year. They always have.

"The number of new members taken in during the year is seventeen; number of members who died during the year, five; number dropped from the membership roll, two; number of meetings held, nineteen; average attendance, seventy; number of scientific papers, seventy-two.

"We have all of the special societies, the ophthalmologic, the otolaryngologic, the gynecologic and obstetric, and urological. I do not know the others. We have a chapter of the College of Surgeons. We have fifty-nine negroes, not members of the society, however."

COUNTY and DISTRICT	Members in County	Physicians in County	Eligible Nonmembers	New Members	Died during 1935	Dropped	Society Meetings	Average Attendance	Papers Read
FIRST DISTRICT—									
Carter	8	14	5	3	2	0	10	6	9
Cooke	12	16	3	0	0	0	12	80%	6
Greene	17	23	5	1	0	1	12	63%	18
Sullivan-Johnson	39	63	21	5	2	2	10	33	18
Washington	40	46	4	1	0	4	12	32	17
SECOND DISTRICT—									
Anderson	17	19		3	0	1	12	7	12
Blount	25	28	3	0	0	0	52	15.84	35
Campbell	24	26	2	2	0	1	11	10	11
Hamblen	13	16	1	1	0	1	12	10	11
Knox	139	155*	11*	9	3	3	35	61	36
Roane	11	19	8		13	2	11		11
THIRD DISTRICT—									
Bradley	15	15	3	1	0	0	12	9	5
Franklin	9	15	6	1	1	0	12	7	18
Grundy	7	5	1	0	0	0	5	4	2
Hamilton	116	153*	12	8	0	2	33	48	58
Polk	7	9	2	0	0	1	3	3	0
Warren	8	13	5	0	1	1	12	80	10
FIFTH DISTRICT—									
Bedford	13	16	2	1	0	0	12	8	9
Lincoln	11	21	8	1	0	12	8		7
Rutherford	21	24	2	1	0	0	12	15	
SIXTH DISTRICT—									
Davidson	250	392	75*	16	0	4	34	60	32
Montgomery	17	16	10	1	0	0	6	15	8
Robertson	15	23	5	2	0	2	6	12†	12
SEVENTH DISTRICT—									
Hardin, Lawrence, Lewis, Perry, and Wayne	20	34	14		2	0	11	15	36
Maury	19	35		3	0	7	9	12	8
Williamson	12	18	4	1	0	0	10	9	10

EIGHTH DISTRICT—

Carroll	7	12	6	0	1	0	11	10	21
Fayette-Hardeman	13	28	15	0	1	1	11	12	24
Henry	13	16	3	0	0	0	11	7	6
Madison	40	§	§	3	0	0	12	20	12
McNairy	6	18							

TENTH DISTRICT—

Shelby	335	500	60	17	5	2	19	70	72
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*Approximately.

†Plus 10 visitors.

§Don't know.

REPORT OF THE DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION

Dr. E. G. Wood read the report of the delegates.

REPORT OF THE TRANSACTIONS OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION, JUNE 10-13, 1935

To the Officers and Members of the Council, Tennessee State Medical Society:

GENTLEMEN:

I hereby submit the following report of the transactions of the House of Delegates of the American Medical Association at Atlantic City. The entire Tennessee delegation was present and participated in the deliberations at each session.

At the first meeting of the House were the usual addresses by the president and president-elect. Dr. Biering, the retiring president, gave a most interesting and short address on the progress of the past year and Dr. McLester, the incoming president, referred principally to the progress in medicine and the necessity for retaining individualization to maintain the high standards that have been developed.

The report of the secretary related to the progress of the Association, the membership, financial condition, etc. The total membership of the American Medical Association had for the first time exceeded 100,000, and the total fellowship nearly 62,000. Dr. West spoke of the special meeting of the House of Delegates held in Chicago in the previous February, at which time the House unanimously reaffirmed its previous statements, opposing all forms of compulsory sickness insurance.

The Board of Trustees' report was very comprehensive and contained much informative data. It showed that more than 85,000 physicians receive the *Journal of the American Medical Association* regularly. References were made to the progress of the special journals published by the American Medical Association, including *Hygeia*, which had a small loss of only slightly above \$1,000, as compared with a loss of over \$30,000 the year previous.

The work of the council and bureaus of the Association were enumerated in detail, showing the immense amount of their work for organized medicine.

The report of the Bureau of Legal Medicine and Legislation under the directorship of Dr. Woodward was interesting. A survey of federal and state legislation pertaining to medical practice, as well as the development of health insurance ideas, and plans of the Wagner-Doughton-Lewis bill, as well as the Epstein bill, were reported in

detail. Dr. Woodward also reported the efforts of the President's Committee on Social Security to develop a system of state medicine.

A review was made of the states' activities relating to the caring for the indigent on relief, many of which were most satisfactory. Work of the other councils and bureaus was also made in the report of the Board of Trustees. The total assets of the Association in December 31, 1934, was given as \$3,686,443.72.

I would further call attention to the many scientific exhibits and their attendance and wonderful cooperative spirit manifested by the exhibitors. This feature each year seems to grow and should surely repay any member who would take advantage thereof.

When the Speaker of the House announced his appointments for reference committees, Tennessee was fortunate enough in securing membership on two of these committees and one being honored with the chairmanship of a most important committee. Many resolutions were introduced at the first meeting and referred to the various reference committees for study and recommendation at a subsequent meeting. These were of various types—as usual anything from a committee to study birth control to one asking the House to approve the idea of compulsory health insurance.

Then on Tuesday was held the usual executive session of the House of Delegates, and several resolutions which were introduced at the morning session were considered at the special session after being reviewed by various reference committees.

A most interesting feature at this session was a special report of Dr. Leland, director of the Bureau of Medical Economics, which bureau had done an immense amount of work during the past year. The report included a study of nearly 200 different experiments being conducted or considered by county medical societies in the United States, organizations for various types of medical service. For those interested further as to these plans a copy in detail form can be had for the asking from the Bureau of Medical Economics, such as, for example, the New York County plan, the Johnson County, Iowa, county plan, the Volunteer Budgeting plan of medical care in San Diego County, California, etc.

At the meeting of the Bureau of Medical Economics in April, 1935, at Chicago, which was attended by about twenty-five representatives from these various county society plans, reports of the methods of operation were given and nine further principles were added to the ten-point program as adopted at the Cleveland session in 1934:

1. A preliminary study should be made in each community to determine the need for any change in medical service.

2. The patient should have freedom of choice of physician.

3. The plan should be completely controlled by the county medical society. This did not mean

that only physicians could be members of the Board of Control, but they should control it.

4. Payment for medical service to low income groups should be based on the ability to pay rather than to have a fixed minimum fee schedule for all individuals.

5. There should be a definite plan to determine the individual's ability to pay for services.

6. There should be some centralized system of records and bookkeeping.

7. Any plan contemplated should contemplate complete medical services.

8. The administration of any plan should include provisions for a service charge to provide for a central office, and also provide a reserve for unusual emergencies or catastrophic load.

9. There should be recognition of standing of medical specialties and resistance to exploitation by corporations.

During the past year the bureau has developed, published, and has passed on to the state and county medical societies many interesting and highly valuable pamphlets pertaining to the health insurance movement, methods of providing medical care, the "Catechism" of sickness insurance, contract practice, group hospitalization, and other economic subjects.

Among the resolutions introduced at the meeting, we find two referring to the question of contraception, two relative to the broadcasting of misinformation pertaining to medicine, foods, and cancer, one referable to the appointment of a committee to investigate and formulate standards governing the manufacture of surgical catgut, methods of sterilization, etc., one relative to the care of indigents and payment to be made from taxation funds, one on medical service organizations, requesting a further study of the operation of same and a subsequent report, one relative to the establishment in medical schools of courses in medical economics, and one requesting that membership in county and state medical societies be a prerequisite for qualification as specialist on the list of specialists of the Council on Medical Education and Hospitals of the American Medical Association.

The resolutions on contraceptions were not approved and those relative to social economic experiments were also eliminated because the Bureau of Medical Economics has all plans under study for care of indigent and low income classes.

A resolution was approved as to the standardization of hospitals depending on their ethical practices according to the standards in the principles of medical ethics of the American Medical Association.

The Judicial Council in reporting the resolution asking for the enforcement on a ruling concerning solicitation of votes for candidates at the annual sessions ruled that it was both illegal and unenforceable.

The work of the Bureau of Medical Economics

was unanimously passed, also its reports and publications, but there was a doubt as to the advisability of approving any plan for group hospitalization which was approved by the House of Delegates.

An explanation was offered by a member of the California delegation by request as to their action in approving compulsory health insurance at their state meeting in March, 1935, and in appointing committees to cooperate with their state legislature in drawing up a suitable bill. They have three unusual problems in that state to deal with: (1) Freedom of licensure; (2) problems in connection with the practice of medicine in county hospitals; (3) hospital associations throughout the state are practicing medicine illegally and evading legal action. Their idea was to attempt to control the development rather than oppose it and have it forced upon them.

A resolution was introduced urging that efforts be made to legalize the restriction of the title "Doctor." The reference committee believed that owing to the fact that state laws differ on this subject, the matter should be left to individual states. The subject of immigrant physicians entering practice in this country was also considered on account of a resolution introduced, but an investigation made recently did not show any increase in the number of foreigners entering practice in the United States so was ordered held in abeyance.

The last meeting was unique in that the Canadian Medical Association held their annual meeting jointly at Atlantic City and many of the Canadian physicians participated in both the scientific programs and exhibits so that the total registration was almost 8,500 which was by far the largest ever registered at an American Medical Association meeting. An invitation was extended by the Canadian association for a joint meeting in Canada before 1940 and the invitation was unanimously accepted.

Election time on Thursday is always a very exciting occasion for most members of the House of Delegates, for, between being desirous of casting votes for "favorite sons" and the meeting place and getting all packed up and boarding the first train for home, it is a rather stormy session. At last election there were four candidates for the office of president-elect. Dr. James Tate Mason, of Seattle; Dr. Charles E. Humiston, of Chicago; Dr. Harvey Cushing, of Boston; and Dr. J. Norman Henry, of Philadelphia, were the candidates. Dr. Mason was elected on the second ballot, defeating Dr. Humiston. Dr. Kenneth Lynch, of South Carolina, was elected vice-president. Dr. Olin West was elected secretary to succeed himself, and Dr. Herman Kretschmer, of Chicago, was reelected treasurer. Two trustees' terms expired and they were succeeded by Dr. Ralph Fenton, of Oregon, and Dr. Jas. B. Bloss, of West Virginia.

Dr. Fred Warnshuis, of California, who had

been speaker of the House of Delegates for the past thirteen years, was succeeded by Dr. Nathan Van Etten, of New York. And lastly, because of the fact that I am giving transactions in the order of their proceedings, I wish to say to you that we should all feel highly honored in that our own efficient Secretary and Editor, by his faithful attendance to duty, and past performances on various reference committees, as well as his undisputable knowledge of parliamentary procedure and law won for him the honor of vice-speaker of the House of Delegates of the American Medical Association. May you, Dr. Shoulders, so perform your duties as such that we may trust the day will not be too far distant when you will wield the gavel over that most honored and representative body of physicians, upon whose shoulders to a great extent rest the future problems of medicine as related to mankind and the individuality of medical practice. The next meeting place was unanimously in favor of Kansas City, which meeting will be held there May 11-15, 1936.

Respectfully submitted,

E. G. WOOD, M.D.

H. B. EVERETT.

H. H. SHOULDERS.

Report referred to Committee on Reports of Officers.

Adjourned to meet at 9:00 a.m. April 15, 1936.

WEDNESDAY MORNING

Meeting convened at 9:10 a.m., Speaker Zemp presiding.

ELECTION OF COUNCILORS

The following were reelected councilors of their districts:

First District—Dr. L. E. Dyer, Greeneville.

Third District—Dr. H. A. Laws, Jr., Chattanooga.

Fifth District—Dr. John W. Sutton, Petersburg.

Seventh District—Dr. C. D. Walton, Mt. Pleasant.

Ninth District—Dr. E. H. Baird, Dyersburg.

Committee on Resolutions

Dr. J. O. Manier reported: "The Resolutions Committee has considered the resolution introduced in this House yesterday, expressing thanks to the legal profession through the Tennessee Bar Association for their kindness to us in the way they have met the problems of damage suits. The committee has considered this resolution and moves it for passage."

Dr. E. T. Newell seconded the motion. The question was called for, voted upon, and carried.

The secretary was instructed to notify the Bar Association of this action.

RESOLUTIONS

Dr. J. O. Manier introduced a resolution with these remarks: "In the last two or three years,

since all of this emergency relief work has come into being and it has been necessary as a corollary of that for the federal and state agencies to fix to some extent the fees, there has arisen between the annual meetings issues that should be met, and we have no individual or committee which is empowered to act for the body in that way. We have felt, not knowing what may arise within the next few years of that kind, that there should be some committee to act between the annual meetings, which had been given the power to act by this body. I realize the need of that myself, because I sat on the committees when that thing first came up, and the Board of Trustees last year had to try to meet a problem of that kind without authority to really act.

"The resolution I wish to introduce is as follows: *'Be It Resolved by the House of Delegates of the Tennessee State Medical Association, That the Board of Trustees is hereby empowered and directed to exercise the powers of the House of Delegates in the matter of forming plans and fixing fees for rendering medical services of any character to the people of Tennessee under the auspices of any public agency financed either by government or by private funds.'*"

The resolution was referred to the Committee on Resolutions.

AMENDMENT TO CONSTITUTION AND BY-LAWS

The committee recommended the passage of the amendment creating an insurance committee.

Moved by Dr. H. B. Everett, seconded by Dr. M. S. Roberts, that the amendment be adopted.

An amendment was offered to the amendment, adding the sentence "All actions of the committee shall be subject to the approval of the Board of Trustees." This addition was acceptable to the makers of the original amendment. The question was then put to a vote and carried, amending the by-laws by the addition of an insurance committee.

THE MEDICAL PRACTICE ACT

Dr. H. W. Qualls, Memphis, secretary of the Tennessee State Board of Medical Examiners, was introduced to discuss the present Medical Practice Act and some amendments thereto.

DR. H. W. QUALLS: Your president has very kindly consented to give me five minutes to discuss this subject, one that I think is of vital importance to every ethical physician in the State of Tennessee.

I want to talk to you just a little about our present Medical Practice Act, and say a few words about some proposed amendments for that act.

The first Medical Practice Act, I mean governing the State Board of Medical Examiners and the practice of medicine in Tennessee, was passed in about 1889. It may interest you to know that we have had very few amendments to that act since that time.

One of the things that I wanted to get over to you is that the Board of Medical Examiners at present do not have any power to revoke a license to practice medicine in Tennessee. I should like to submit some proposed amendments that I think will properly take care of that.

I spoke of this matter a number of times to our former secretary of the Board of Medical Examiners, Dr. DeLoach. He always discouraged me by saying, "When you ask a bunch of politicians for something, you usually get worse than you already have."

I will tell you of just one instance which will give you some idea of what we are now contending with. For some time we have required that all applicants to practice medicine in Tennessee be graduates of A grade medical schools. The present Medical Practice Act now requires that we have four regular physicians, one homeopath, and one eclectic. Two must come from each grand division of the state. Last September the eclectic member of this board died. According to the present Medical Practice Act, it became the duty of the remaining members of the board to appoint a member for the unexpired term, and that member had to come from Middle Tennessee. Upon investigation we were able to find one eclectic doctor in Middle Tennessee. He is a graduate from a C grade medical school. It seemed so inconsistent to the members of the State Board of Medical Examiners to appoint a man from a C grade medical school and require the applicants to be graduates from A grade medical schools so the Board of Medical Examiners went before the attorney-general and asked him if it would be possible for us to continue with five members of the Board of Medical Examiners until the next meeting of the Tennessee legislature, or without appointing a man for the unexpired term. He assured us it would be entirely legal, so for that reason we did not appoint a man.

The proposed amendment would state that for a man to be a member of the State Board of Medical Examiners he must be a graduate from an A grade school, classified as such by the Council on Medical Education and Hospitals of the American Medical Association. I think if we started talking about homeopaths and eclectics we probably would not get very far.

At the proper time I should like to present all of these proposed amendments to the proper committee. I thank you very much.

Dr. Battle Malone then introduced as a resolution, "*Resolved*, That the Medical Practice Act be amended."

The resolution was referred to the Committee on Resolutions.

PRESIDENT'S ADDRESS

President Steele then read his address to the House of Delegates.

ADDRESS OF PRESIDENT STEELE BEFORE HOUSE OF DELEGATES

Mr. Speaker and Gentlemen of the House of Delegates:

Not having previously served as president of this distinguished organization, I am frank to admit that I was ignorant of the fact that it was customary for the president to address you. In fact, it was only last Sunday Dr. Bogart first informed me such was my duty.

I have enjoyed the year's work and am indeed sorry I found it impossible to travel over the state in an effort to increase our membership and fight state medicine. When I took the office I intended to do quite a good deal of traveling. However, due to personal financial reasons, I was not able to carry out my plans.

After giving careful study to the welfare of our organization, I am thoroughly convinced that, as soon as possible, we should employ a whole-time secretary. I do not believe it possible for busy, successful practitioners such as Dr. Shoulders and Dr. Hardy to carry on the work satisfactorily. I believe with a whole-time secretary we could increase the membership and the attendance at the annual meetings. I also feel that it is the duty of the local society in the city where the meeting is to be held to go to the expense of sending out invitations in addition to the program sent out by the secretary. If we are not in a position to employ a whole-time secretary, I still feel that more information regarding our annual meetings should be forwarded from the secretary's office.

At the present time, it is most important that every man interested in organized medicine read everything he can find on state medicine and fight against such a law being enacted.

Several times during the year I have been approached by physicians specializing in eye, ear, nose, and throat work, requesting me to do something in regard to having their section meet with the general sessions. I suggest for your consideration a plan whereby these gentlemen could meet Tuesday morning and Wednesday morning, and not hold a separate meeting as they have done. This would give them an opportunity to be present at the night session Tuesday and to enjoy the banquet Wednesday night. Organized medicine needs every man in the profession, and I am very much opposed to separate meetings.

I recommend a closer cooperation between the State Health Department and our organization. I also suggest that we seriously consider the advisability of requesting the Commonwealth Foundation to send their representatives into this state for the purpose of putting over successfully the fight on diphtheria. I am thoroughly convinced that we, as an organization, cannot successfully put over this proposition as we do not have the necessary funds.

REPORT OF COMMITTEE ON REPORTS OF OFFICERS

Dr. A. F. Cooper, Memphis, chairman of the Committee on Reports of Officers, read the report.

To the House of Delegates of the Tennessee State Medical Association:

This, your Committee on Reports of Officers, begs to report that the three reports coming to us, namely, that of the Secretary-Editor, that of the Board of Trustees, and the audit of the financial affairs of the State Association prepared by Osborn and Duncan, C. P. A., Nashville, Tenn., have been examined. We desire to report further that these reports manifest very evidently and clearly that the affairs of the Association have been placed in most trustworthy hands and have been administered admirably.

We desire to express our appreciation of the work done by these officers of the Association and to compliment them sincerely upon the manner in which they have transacted their duties.

A. F. COOPER, Chairman.

S. J. SULLIVAN.

JEFFERSON C. PENNINGTON.

Moved by Dr. W. Britt Burns, seconded by Dr. Ralph Monger, put to a vote and carried that the committee's report be adopted.

House adjourned to meet at 2:00 p.m.

WEDNESDAY AFTERNOON SESSION, APRIL 15, 1936

Speaker Zemp called the House to order at 2:10 p.m.

REPORT OF THE COMMITTEE ON REPORTS OF COMMITTEES

For the committee Dr. N. S. Shofner read the following reports:

Committee on Medical Education

The committee took up these reports as they came and wrote the recommendations on the back. The first is the report of the Committee on Medical Education. After due consideration, your committee recommends that this report be turned over to the Board of Trustees due to the fact that recommendations for putting the plan into effect would have to come through them. We further recommend that the House of Delegates authorize the Board of Trustees to appropriate the funds necessary for the work contemplated when the proper conditions have been met.

Dr. J. O. Manier moved, seconded by Dr. Ralph Monger, the adoption of the report. After the vote the speaker declared motion had carried.

Committee on Maternal Welfare

DR. N. S. SHOFNER: Next is the report on Maternal Welfare. The committee recommends that this report be approved, and that the Committee on Maternal Welfare be requested to con-

tinue this study. In view of the similarity of subject matter considered by this committee and the Committee on Medical Education, we recommend that the two committees work together to their common end. We further recommend that the House of Delegates express its sincere appreciation of the enormous amount of work done by this Committee on Maternal Welfare and for the excellence of its report and recommendations.

Moved by Dr. J. O. Manier, seconded by Dr. Ralph Monger, and voted on and carried that this report be adopted.

Liaison Committee

DR. N. S. SHOFNER: Next is the report of the Liaison Committee. Your Committee on Reports of Committees recommends the adoption of this report.

Drs. H. H. Shoulders and J. O. Manier moved and seconded the adoption of this report. Vote was taken and motion declared carried.

Tennessee Emergency Relief Administration Committee

DR. N. S. SHOFNER: This is the report of the special committee appointed to confer with the Tennessee Emergency Relief Administration. The committee recommends the adoption of this report.

On motion and second of Drs. Monger and Manier, a vote was taken and carried to the effect that the House adopt the report of the committee.

Advisory Committee to the Woman's Auxiliary

DR. N. S. SHOFNER: Next is the report of the Advisory Committee to the Woman's Auxiliary. The committee recommends the adoption of this report.

Drs. H. H. Shoulders and W. Britt Burns moved and seconded the adoption of the report. Vote carried.

Medical Defense Committee

DR. N. S. SHOFNER: This is the report of the Medical Defense Committee. The committee recommends that this report be adopted.

Dr. Monger moved the adoption of the report. Dr. Burns seconded the motion. Motion carried.

State Tuberculosis Hospital Commission

DR. N. S. SHOFNER: This is the report of the State Tuberculosis Hospital Commission. The committee recommends the adoption of this report.

Drs. Ralph Monger and J. Marsh Frere moved and seconded the adoption of the report. Motion carried.

Cancer Committee

DR. N. S. SHOFNER: The Report of the Cancer Committee. The committee recommends the adoption of this report.

Dr. Burns moved and Dr. Monger seconded the motion that the report be adopted. Motion carried.

Hospital Committee

DR. N. S. SHOFNER: The committee recom-

mends the adoption of the report of the Hospital Committee.

Drs. Monger and Frere moved and seconded the adoption of the report. Carried.

COMMITTEE ON RESOLUTIONS

Tennessee Emergency Relief Administration Resolution

DR. J. O. MANIER: Your Committee on Resolutions has considered the resolution which was introduced in this House this morning, empowering the Board of Trustees to exercise the powers of the House of Delegates in matters of forming plans and fixing fees for rendering medical services of any character to the people of Tennessee under the auspices of any public agency financed either by government or by private funds.

The committee approves of this resolution and I move its adoption.

Seconded by Dr. H. B. Everett, put to a vote and carried.

Medical Practice Act

DR. J. O. MANIER: Mr. Speaker, there was one other resolution referred to the Committee on Resolutions this morning, introduced by Dr. Battle Malone, stating that the resolution be approved for the amendment of the Medical Practice Act. Your Committee on Resolutions approved of that resolution, and after having approved of it referred it to the Legislative Committee, where it belongs, and I presume they will report for final adoption.

Hospitalization Insurance

The chair recognized Dr. J. Marsh Frere, who presented a resolution.

DR. FRERE: For the benefit of the men who do not know about this, we have a section of the Tennessee State Medical Society known as the Tennessee Radiological Society, and at our meeting at noon today we proposed this resolution, and we want to present it at this time:

"Be It Resolved, That the Tennessee Radiological Society assembled in session this fifteenth day of April, 1936, at Memphis, Tennessee, after duly considering the operation in the state of Tennessee of a form of hospitalization insurance in present usage which provides for the policyholders receiving any reduction of fees on examinations involving the professional services of radiologists, or specialists in other branches of medicine, are directly opposed to such regulation of professional fees by nonprofessional organizations.

"Be It Further Resolved, That these resolutions be submitted to the Resolutions Committee of the House of Delegates of the Tennessee State Medical Society, and that this body take such action as to correct this infringement on the practice of medicine.

Respectfully submitted,

W. W. ROBINSON.
R. P. BALL.
J. CASH KING.

THE SPEAKER: The resolution is referred to the Resolutions Committee.

House recessed at 2:30 to meet Thursday at 9:00 a.m.

THURSDAY MORNING, APRIL 16, 1936

The House convened at 9:25 a.m., Speaker Zemp presiding.

ELECTION OF OFFICERS

As required by the by-laws the Nominating Committee submitted three names for president and one name for each of the other offices to be filled. Other nominations were called for before each vote. No nominations were made from the floor.

The election resulted as follows:

President

W. L. Williamson, Memphis.

Vice-President

East Tennessee—Lee K. Gibson, Johnson City.

Middle Tennessee—J. O. Walker, Franklin.

West Tennessee—J. A. Powers, Jackson.

Secretary

H. H. Shoulders, Nashville.

Speaker

E. R. Zemp, Knoxville.

Delegate to the A. M. A.

E. G. Wood, Knoxville.

Alternate to the A. M. A.

E. T. Newell, Chattanooga.

Trustee

A. F. Cooper, Memphis.

NEXT MEETING PLACE

Dr. W. P. Wood invited the Association to meet in Knoxville in 1937. Moved by Dr. L. W. Edwards and seconded by Dr. W. B. Burns that the invitation be accepted. Motion carried.

(Note: The constitution fixes the meeting date as the second Tuesday in April.)

RESOLUTION PERTAINING TO HOSPITAL INSURANCE

While waiting for the introduction of the new president, the Committee on Resolutions reported:

DR. J. O. MANIER: Your Committee on Resolutions has considered the resolution introduced on yesterday pertaining to hospital insurance and wishes to go on record as wholeheartedly and unanimously approving the resolution as presented.

Your committee would call attention of this body to the following facts in reference to hospitalization insurance covering any reduction of fees on examinations involving the professional services of radiologists or other specialists in other branches of medicine:

1. Such a procedure interferes with the fundamental principles of freedom of choice of physicians on the part of the patient involved.

2. Such a procedure allows corporations to actually engage in the practice of medicine contrary to all existing state laws.

3. The fixing of such fees by corporations or other lay bodies is an actual interference with the freedom of medicine.

Mr. Speaker, I move the adoption of this resolution.

Motion seconded by Dr. W. B. Burns. Vote taken and motion carried.

NEWLY-ELECTED PRESIDENT

Newly-elected president, Dr. W. L. Williamson, was presented and addressed the House.

PRESIDENT WILLIAMSON: Gentlemen, I cannot tell you how much I appreciate getting into all of this trouble, but I assure you that I will be ready to do anything I can, and I am going to call on every one of you for help.

I figure in this formative time that we should have a great interest in this work and do all we can. I think we all realize that there is only one object to be accomplished, with many different ways that we may have to try to accomplish this one thing, and that is unity of action. The doctors are the only ones in the country to put over this job, and we cannot get another bunch for a long time to do the work, and if we just can get together and get enough together, there is no doubt but that we can accomplish the best thing. Of course, we do not want anything unreasonable, but we do not want to concede defeat and we do not want to be dictated to by uninterested foundations or concerns which have nothing but their glory at stake, and I think we should fight to the bitter end for what we think is the best thing for organized medicine. If we can all get to work and get everybody in the state in our organization and get them educated, let them know what the situation is, and go to bat with a solid front, I think we can accomplish anything that we want to accomplish. I certainly thank you all.

PUBLICATION OF RESOLUTION

Moved by Dr. C. M. Hamilton, and seconded by Dr. Battle Malone, that the resolution pertaining to hospital insurance be published in the local newspapers. Motion carried.

REPORT OF THE LEGISLATIVE COMMITTEE

The speaker called for the report of the Legislative Committee. Dr. L. W. Edwards read the report as follows:

Since your Legislative Committee made a report last year, it had introduced into the last legislature for action two laws drawn up by Dr. Battle Malone, of Memphis, one of which purported to have put on the statute books the so-called Basic Science Law for the state, and another act to pro-

vide for the members of the State Board of Medical Examiners to be appointed by the governor from a list submitted to him by this body.

It seems that the legislature got into quite a jam with tax laws and other things, and our bills got lost in the shuffle. We did not have a chance to get these laws passed. But the committee will take it up with the next legislature and make every effort to get these laws passed.

This committee yesterday considered some amendments that have been drawn up by the Board of Medical Examiners in which they proposed certain changes in the Medical Practice Act for the state, and your committee recommends that this House approve these amendments drawn up by the members of the Board of Medical Examiners so that the Legislative Committee can work with this board at the next legislature to try to get, we think, the necessary changes made in the Medical Practice Act.

I believe this is about all that we have to report as far as the Legislative Committee is concerned. Dr. Battle Malone will take up some discussion of some of the points to be brought out.

DR. MALONE: We have been over the proposed changes in our local society, and our local society approved of them, and we simply should like to have the House of Delegates give us their endorsement of what they are going to try to do at the next legislature, particularly if we could get the Basic Science Law passed in this state, and if we could have the educational board and the preliminary board. They really are not doing anything. They simply charge these boys \$10.00, send them a list, and they do not examine them at all. If we can get the Basic Science Law enacted and get rid of this other board, and let the Basic Science Board, if it can be created, take the place of this preliminary board, I think we will accomplish a great deal for the profession in the state. I should like to have your endorsement and help when we get before the next legislature to see if we cannot accomplish something along these lines.

THE SPEAKER: Is there any discussion on those remarks? I think that will come under your committee work.

DR. EVERETT: I move that this House go on record as endorsing the amendments as proposed which are now in the hands of the Legislative Committee of this body, and that we render whatever assistance we can when called upon by the committee.

SECRETARY SHOULDERS: Mr. President, may I amend the motion proposed by Dr. Everett to the extent that the Legislative Committee is authorized to make such changes as they find expedient in the course of getting the bill through.

DR. EVERETT: I accept that amendment.

SECRETARY SHOULDERS: I wanted to say this: This is the first time, I think, it has gotten around to the point where the Board of Examiners and the Legislative Committee and all concerned are in agreement that a definite change is needed. Of course, it is embarrassing at times for our Legislative Committee to find some one objection in a bill, that probably is not an important phase of the bill, which needs to be changed, but still the committee sometimes feels a hesitancy in making the change. I think we ought to get a good committee, as we have it, and give them the power to make such revisions as are necessary.

THE SPEAKER: The amendment has been accepted.

The motion was seconded.

THE SPEAKER: We will vote on both at the same time. Is there any discussion? All in favor say "aye"; opposed "no." It is so ordered, and this committee has the power to make any changes it sees fit.

LEGISLATIVE EXPENSE

Moved by Dr. Everett, seconded by Dr. Burns, put to a vote and carried that the Board of Trustees provide whatever necessary reasonable expenses are incurred to secure the passage of these measures by the Legislative Committee.

STATE BOARD OF HEALTH

Inasmuch as the members of the State Board of Health were appointed by the governor for one, two or three-year terms and as some of these are expiring soon, it was moved by Dr. H. H. Shoulders and seconded by Dr. T. R. Ray that the Board of Trustees be authorized to furnish to the governor, at the proper time, a list of nominees from whom the governor may fill the vacancies.

VOTE OF THANKS

DR. BOGART: I should like to make such a motion that we extend to the Shelby County and the Memphis societies our appreciation for the entertainment and courtesy, and that we who are in the House particularly extend to the local members our thanks for the dinner and other special entertainment.

DR. EDWARDS: I second that motion.

THE SPEAKER: Is there any discussion? We have all had a wonderful and glorious time here this year. All in favor of the motion say "aye"; opposed "no." It is carried and is so ordered. We extend our thanks to the local profession for their wonderful entertainment.

Is there any other business? If not, we will stand adjourned until next year.

The meeting adjourned at 10:00 o'clock.

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H. H. SHOULDERS, M.D., Editor and Secretary

JUNE, 1936

EDITORIAL

ONE PROVISION IN THE CODE OF MEDICAL ETHICS

The principles in the code of medical ethics of the American Medical Association should be read and reread by every doctor in America. In the first place, it is fine literature. In the second place, its provisions take into account traits of human character which have been evident always. In the third place, no more lofty provisions have been incorporated in a code of conduct for human beings. In it are provisions to govern the relationship of doctors with each other. There are other provisions which should govern the relationship between a doctor and his patients. There are provisions which should govern the relationship between one doctor and his patient when the services of another doctor are desired. There are provisions which govern the financial relationships between doctor and patient and it is to this that brief reference should be made at this time.

The principle in the code is that the fees for services which a doctor should receive should be in relationship to the ability of the person to pay and the services rendered.

The indigent (orphans and widows) should receive services free. Those who are able to pay should pay in proportion to the ability and in proportion to the services rendered. Those able to pay larger fees should willingly do so. Those able to pay small fees should be charged small fees.

For these reasons no medical organization is able to formulate a schedule of fees which

applies to all the people in a community, because we cannot hold to the principles of a profession on one hand and to the principles of a labor union on the other hand and still remain a profession in principle.

The value of the services of a doctor cannot be measured as can the hours of work of a mechanic or machinist or day laborer. His services may be lifesaving and still require a minimum of time. Again his services may involve a great deal of time in travel to and from the patient and still not accomplish what he and the patient would much desire.

There are many reasons why professional fees cannot be and should not be measured by such terms as miles of travel, hours of time from the office, etc.

Emphasis is given to these principles in the code for the reason that one hears now and then of a doctor charging fees beyond the ability of the individual to pay. Again we hear of fees charged which are small and well below the ability of others to pay. Again we hear of some local group attempting to fix a fee schedule on a mileage basis, or again so much for a delivery, etc., which schedule applies to the rich and poor alike. Both are erroneous. Both are contrary to the principles in the code. Violations of these principles by the very few make it difficult at times to uphold the profession when some person who wishes to bring full-fledged state medicine into being brings up these rare occurrences and represents them to be current examples of the practices of physicians.

Leadership in medicine is compelled to say that such practices are not endorsed or condoned by organized medicine.

For these reasons we are again publishing "The Principles of the Code of Medical Ethics" in this issue of the JOURNAL and recommend that it be read with care by every member.

PRINCIPLES OF MEDICAL ETHICS

CHAPTER I.—IN GENERAL

The Physician's Responsibility

Section 1. A profession has for its prime object the service it can render to humanity; reward or financial gain should be a subordinate consideration. The practice of

medicine is a profession. In choosing this profession an individual assumes an obligation to conduct himself in accord with its ideals.

Groups and Clinics

Sec. 2. The ethical principles actuating and governing a group or clinic are exactly the same as those applicable to the individual. As a group or clinic is composed of individual doctors, each of whom, whether employer, employee or partner, is subject to the principles of ethics herein elaborated, the uniting into a business or professional organization does not relieve them either individually or as a group from the obligation they assume when entering the profession.

CHAPTER II.—THE DUTIES OF PHYSICIANS TO THEIR PATIENTS

Patience, Delicacy, and Secrecy

Section 1. Patience and delicacy should characterize all the acts of a physician. The confidences concerning individual or domestic life entrusted by a patient to a physician and the defects of disposition or flaws of character observed in patients during medical attendance should be held as a trust and should never be revealed except when imperatively required by the laws of the state. There are occasions, however, when a physician must determine whether or not his duty to society requires him to take definite action to protect a healthy individual from becoming infected, because the physician has knowledge, obtained through the confidences entrusted to him as a physician, of a communicable disease to which the healthy individual is about to be exposed. In such a case, the physician should act as he would desire another to act toward one of his own family under like circumstances. Before he determines his course, the physician should know the civil law of his commonwealth concerning privileged communications.

Prognosis

Sec. 2. A physician should give timely notice of dangerous manifestations of the disease to the friends of the patient. He should neither exaggerate nor minimize the gravity of the patient's condition. He

should assure himself that the patient or his friends have such knowledge of the patient's condition as will serve the best interests of the patient and the family.

Patients Must Not Be Neglected

Sec. 3. A physician is free to choose whom he will serve. He should, however, always respond to any request for his assistance in an emergency or whenever temperate public opinion expects the service. Once having undertaken a case, a physician should not abandon or neglect the patient because the disease is deemed incurable; nor should he withdraw from the case for any reason until a sufficient notice of a desire to be released has been given the patient or his friends to make it possible for them to secure another medical attendant.

CHAPTER III.—THE DUTIES OF PHYSICIANS TO EACH OTHER AND TO THE PROFESSION AT LARGE

Article I.—Duties to the Profession Uphold Honor of Profession

Section 1. The obligation assumed on entering the profession requires the physician to comport himself as a gentleman and demands that he use every honorable means to uphold the dignity and honor of his vocation, to exalt its standards and to extend its sphere of usefulness. A physician should not base his practice on an exclusive dogma or sectarian system, for "sects are implacable despots; to accept their thralldom is to take away all liberty from one's action and thought." (Nicon, father of Galen.)

Medical Societies

Sec. 2. In order that the dignity and honor of the medical profession may be upheld, its standards exalted, its sphere of usefulness extended, and the advancement of medical science promoted, a physician should associate himself with medical societies and contribute his time, energy, and means in order that these societies may represent the ideals of the profession.

Deportment

Sec. 3. A physician should be "an up-right man, instructed in the art of healing." Consequently, he must keep himself pure in character and conform to a high stand-

ard of morals, and must be diligent and conscientious in his studies. "He should also be modest, sober, patient, prompt to do his whole duty without anxiety; pious without going so far as superstition, conducting himself with propriety in his profession and in all the actions of his life." (Hippocrates.)

Advertising

Sec. 4. Solicitation of patients by physicians as individuals, or collectively in groups by whatsoever name these be called, or by institutions or organizations, whether by circulars or advertisements, or by personal communications, is unprofessional. This does not prohibit ethical institutions from a legitimate advertisement of location, physical surroundings and special class—if any—of patients accommodated. It is equally unprofessional to procure patients by indirection through solicitors or agents of any kind, or by indirect advertisements, or by furnishing or inspiring newspaper or magazine comments concerning cases in which the physician has been or is concerned. All other like self-laudations defy the traditions and lower the tone of any profession and so are intolerable. The most worthy and effective advertisement possible, even for a young physician, and especially with his brother physicians, is the establishment of a well-merited reputation for professional ability and fidelity. This cannot be forced, but must be the outcome of character and conduct. The publication or circulation of ordinary simple business cards, being a matter of personal taste or local custom, and sometimes of convenience, is not *per se* improper. As implied, it is unprofessional to disregard local customs and offend recognized ideals in publishing or circulating such cards.

It is unprofessional to promise radical cures; to boast of cures and secret methods of treatment or remedies; to exhibit certificates of skill or of success in the treatment of diseases; or to employ any methods to gain the attention of the public for the purpose of obtaining patients.

Patents and Perquisites

Sec. 5. It is unprofessional to receive remuneration from patents for surgical in-

struments or medicines; to accept rebates on prescriptions or surgical appliances, or perquisites from attendants who aid in the care of patients.

Medical Laws—Secret Remedies

Sec. 6. It is unprofessional for a physician to assist unqualified persons to evade legal restrictions governing the practice of medicine; it is equally unethical to prescribe or dispense secret medicines or other secret remedial agents, or manufacture or promote their use in any way.

Safeguarding the Profession

Sec. 7. Physicians should expose without fear or favor, before the proper medical or legal tribunals, corrupt or dishonest conduct of members of the profession. All questions affecting the professional reputation or standing of a member or members of the medical profession should be considered only before proper medical tribunals in executive sessions or by special or duly appointed committees on ethical relations. Every physician should aid in safeguarding the profession against the admission to its ranks of those who are unfit or unqualified because deficient either in moral character or education.

Article II.—Professional Services of Physicians to Each Other

Physicians Dependent on Each Other

Section 1. Experience teaches that it is unwise for a physician to treat members of his own family or himself. Consequently, a physician should always cheerfully and gratuitously respond with his professional services to the call of any physician practicing in his vicinity, or of the immediate family dependents of physicians.

Compensation for Expenses

Sec. 2. When a physician from a distance is called on to advise another physician or one of his family dependents, and the physician to whom the service is rendered is in easy financial circumstances, a compensation that will at least meet the traveling expenses of the visiting physician should be proffered. When such a service requires an absence from the accustomed field of professional work of the visitor that might

reasonably be expected to entail a pecuniary loss, such loss should, in part at least, be provided for in the compensation offered.

One Physician to Take Charge

Sec. 3. When a physician or a member of his dependent family is seriously ill, he or his family should select a physician from among his neighboring colleagues to take charge of the case. Other physicians may be associated in the care of the patient as consultants.

Article III.—Duties of Physician in Consultations

Consultations Should Be Encouraged

Section 1. In serious illness, especially in doubtful or difficult conditions, the physician should request consultations.

Consultation for Patient's Benefit

Sec. 2. In every consultation, the benefit to be derived by the patient is of first importance. All the physicians interested in the case should be frank and candid with the patient and his family. There never is occasion for insincerity, rivalry or envy and these should never be permitted between consultants.

Punctuality

Sec. 3. It is the duty of a physician, particularly in the instance of a consultation, to be punctual in attendance. When, however, the consultant or the physician in charge is unavoidably delayed, the one who first arrives should wait for the other for a reasonable time, after which the consultation should be considered postponed. When the consultant has come from a distance, or when for any reason it will be difficult to meet the physician in charge at another time, or if the case is urgent, or if it be the desire of the patient, he may examine the patient and mail his written opinion, or see that it is delivered under seal, to the physician in charge. Under these conditions, the consultant's conduct must be especially tactful; he must remember that he is framing an opinion without the aid of the physician who has observed the course of the disease.

Patient Referred to Specialist

Sec. 4. When a patient is sent to one

specially skilled in the care of the condition from which he is thought to be suffering, and for any reason it is impracticable for the physician in charge of the case to accompany the patient, the physician in charge should send to the consultant by mail, or in the care of the patient under seal, a history of the case, together with the physician's opinion and an outline of the treatment, or so much of this as may possibly be of service to the consultant; and as soon as possible after the case has been seen and studied, the consultant should address the physician in charge and advise him of the results of the consultant's investigation of the case. Both these opinions are confidential and must be so regarded by the consultant and by the physician in charge.

Discussions in Consultation

Sec. 5. After the physicians called in consultation have completed their investigations of the case, they should meet by themselves to discuss conditions and determine the course to be followed in the treatment of the patient. No statement or discussion of the case should take place before the patient or friends, except in the presence of all the physicians attending, or by their common consent; and no opinions or prognostications should be delivered as a result of the deliberations of the consultants, which have not been concurred in by the consultants at their conference.

Attending Physician Responsible

Sec. 6. The physician in attendance is in charge of the case and is responsible for the treatment of the patient. Consequently, he may prescribe for the patient at any time and is privileged to vary the mode of treatment outlined and agreed on at a consultation whenever, in his opinion, such a change is warranted. However, at the next consultation, he should state his reasons for departing from the course decided on at the previous conference. When an emergency occurs during the absence of the attending physician, a consultant may provide for the emergency and the subsequent care of the patient until the arrival of the physician in charge, but should do no more than this

without the consent of the physician in charge.

Conflict of Opinion

Sec. 7. Should the attending physician and the consultant find it impossible to agree in their view of a case another consultant should be called to the conference or the first consultant should withdraw. However, since the consultant was employed by the patient in order that his opinion might be obtained, he should be permitted to state the result of his study of the case to the patient, or his next friend in the presence of the physician in charge.

Consultant and Attendant

Sec. 8. When a physician has attended a case as a consultant, he should not become the attendant of the patient during that illness except with the consent of the physician who was in charge at the time of the consultation.

Article IV.—Duties of Physicians in Cases of Interference

Criticism to Be Avoided

Section 1. The physician, in his intercourse with a patient under the care of another physician, should observe the strictest caution and reserve; should give no disingenuous hints relative to the nature and treatment of the patient's disorder; nor should the course of conduct of the physician, directly or indirectly, tend to diminish the trust reposed in the attending physician. In embarrassing situations, or wherever there may seem to be a possibility of misunderstanding with a colleague, the physician should always seek a personal interview with his fellow.

Social Calls on Patient of Another Physician

Sec. 2. A physician should avoid making social calls on those who are under the professional care of other physicians without the knowledge and consent of the attendant. Should such a friendly visit be made, there should be no inquiry relative to the nature of the disease or comment upon the treatment of the case, but the conversation should be on subjects other than the physical condition of the patient.

Services to Patient of Another Physician

Sec. 3. A physician should never take charge of or prescribe for a patient who is under the care of another physician, except in an emergency, until after the other physician has relinquished the case or has been properly dismissed.

Criticism to Be Avoided

Sec. 4. When a physician does succeed another physician in the charge of a case, he should not make comments on or insinuations regarding the practice of the one who preceded him. Such comments or insinuations tend to lower the esteem of the patient for the medical profession and so react against the critic.

Emergency Cases

Sec. 5. When a physician is called in an emergency and finds that he has been sent for because the family attendant is not at hand, or when a physician is asked to see another physician's patient because of an aggravation of the disease, he should provide only for the patient's immediate need and should withdraw from the case on the arrival of the family physician after he has reported the condition found and the treatment administered.

When Several Physicians Are Summoned

Sec. 6. When several physicians have been summoned in a case of sudden illness or of accident, the first to arrive should be considered the physician in charge. However, as soon as the exigencies of the case permit, or on the arrival of the acknowledged family attendant or the physician the patient desires to serve him, the first physician should withdraw in favor of the chosen attendant; should the patient or his family wish some one other than the physician known to be the family physician to take charge of the case the patient should advise the family physician of his desire. When, because of sudden illness or accident, a patient is taken to a hospital the patient should be returned to the care of his known family physician as soon as the condition of the patient and the circumstances of the case warrant this transfer.

A Colleague's Patient

Sec. 7. When a physician is requested by a colleague to care for a patient during his temporary absence, or when, because of an emergency, he is asked to see a patient of a colleague, the physician should treat the patient in the same manner and with the same delicacy as he would have one of his own patients cared for under similar circumstances. The patient should be returned to the care of the attending physician as soon as possible.

Relinquishing Patient to Regular Attendant

Sec. 8. When a physician is called to the patient of another physician during the enforced absence of that physician, the patient should be relinquished on the return of the latter.

Substituting in Obstetric Work

Sec. 9. When a physician attends a woman in labor in the absence of another who has been engaged to attend, such physician should resign the patient to the one first engaged, upon his arrival; the physician is entitled to compensation for the professional services he may have rendered.

Article V.—Differences Between Physicians Arbitration

Section 1. Whenever there arises between physicians a grave difference of opinion which cannot be promptly adjusted, the dispute should be referred for arbitration to a committee of impartial physicians, preferably the Board of Censors of a component county society of the American Medical Association.

Article VI.—Compensation

Limits of Gratuitous Service

Section 1. The poverty of a patient and the mutual professional obligation of physicians should command the gratuitous services of a physician. But endowed institutions and organizations for mutual benefit, or for accident, sickness and life insurance, or for analogous purposes, have no claim upon physicians for unremunerated services.

Contract Practice

Sec. 2. It is unprofessional for a physician to dispose of his services under condi-

tions that make it impossible to render adequate service to his patient or which interfere with reasonable competition among the physicians of a community. To do this is detrimental to the public and to the individual physician, and lowers the dignity of the profession.

"By the term 'contract practice' as applied to medicine is meant the carrying out of an agreement between a physician or a group of physicians, as principals or agents, and a corporation, organization or individual, to furnish partial or full medical services to a group or class of individuals for a definite sum or a fixed rate per capita.

"Contract practice per se is not unethical. However, certain features or conditions if present make a contract unethical, among which are: (1) When there is solicitation of patients, directly or indirectly. (2) When there is underbidding to secure the contract. (3) When the compensation is inadequate to assure good medical service. (4) When there is interference with reasonable competition in a community. (5) When free choice of a physician is prevented. (6) When the conditions of employment make it impossible to render adequate service to the patients. (7) When the contract because of any of its provisions or practical results is contrary to sound public policy.

"Each contract should be considered on its own merits and in the light of surrounding conditions. Judgment should not be obscured by immediate, temporary or local results. The decision as to its ethical or unethical nature must be based on the ultimate effect for good or ill on the people as a whole."

Commissions

Sec. 3. When a patient is referred by one physician to another for consultation or for treatment, whether the physician in charge accompanies the patient or not, it is unethical to give or to receive a commission by whatever term it may be called or under any guise or pretext whatsoever.

Direct Profit to Lay Groups

Sec. 4. It is unprofessional for a physician to dispose of his professional attainments or services to any lay body, organi-

zation, group or individual, by whatever name called, or however organized, under terms or conditions which permit a direct profit from the fees, salary or compensation received to accrue to the lay body or individual employing him. Such a procedure is beneath the dignity of professional practice, is unfair competition with the profession at large, is harmful alike to the profession of medicine and the welfare of the people, and is against sound public policy.

CHAPTER IV.—THE DUTIES OF THE PROFESSION TO THE PUBLIC

Physicians as Citizens

Section 1. Physicians, as good citizens and because their professional training specially qualifies them to render this service, should give advice concerning the public health of the community. They should bear their full part in enforcing its laws and sustaining the institutions that advance the interests of humanity. They should cooperate especially with the proper authorities in the administration of sanitary laws and regulations. They should be ready to counsel the public on subjects relating to sanitary police, public hygiene, and legal medicine.

Public Health

Sec. 2. Physicians, especially those engaged in public health work, should enlighten the public regarding quarantine regulations; on the location, arrangement and dietaries of hospitals, asylums, schools, prisons, and similar institutions; and concerning measures for the prevention of epidemic and contagious diseases. When an epidemic prevails, a physician must continue his labors for the alleviation of suffering people, without regard to the risk to his own health or life or to financial return. At all times, it is the duty of the physician to notify the properly constituted public health authorities of every case of communicable disease under his care, in accordance with the laws, rules and regulations of the health authorities of the locality in which the patient is.

Public Warned

Sec. 3. Physicians should warn the public against the devices practiced and the

false pretensions made by charlatans which may cause injury to health and loss of life.

Pharmacists

Sec. 4. By legitimate patronage, physicians should recognize and promote the profession of pharmacy; but any pharmacist, unless he be qualified as a physician, who assumes to prescribe for the sick, should be denied such countenance and support. Moreover, whenever a druggist or pharmacist dispenses deteriorated or adulterated drugs, or substitutes one remedy for another designated in a prescription, he thereby forfeits all claims to the favorable consideration of the public and physicians.

Conclusion

While the foregoing statements express in a general way the duty of the physician to his patients, to other members of the profession and to the profession at large, as well as of the profession to the public, it is not to be supposed that they cover the whole field of medical ethics, or that the physician is not under many duties and obligations besides these herein set forth. In a word, it is incumbent on the physician that under all conditions, his bearing toward patients, the public and fellow practitioners should be characterized by a gentlemanly deportment and that he constantly should behave toward others as he desires them to deal with him. Finally, these principles are primarily for the good of the public and their enforcement should be conducted in such a manner as shall deserve and receive the endorsement of the community.

SOME AMENDMENTS TO THE CONSTITUTION AND BY-LAWS OF THE AMERICAN MEDICAL ASSOCIATION

At the last meeting of the House of Delegates of the American Medical Association an amendment to Chapter IX, Section I, of the Constitution and By-Laws of the American Medical Association was proposed and approved by the Judicial Council and recommended for adoption, as follows:

"The Judicial Council shall have authority in its discretion from time to time to request the president to appoint investigat-

ing juries to which it may refer complaints or evidence of unethical conduct which in its judgment are of greater than local concern. Such investigating juries, if probable cause for action be shown, shall report with formal charges to the president, who, under Chapter V, Section 1, of the By-Laws, shall appoint a prosecutor, who, in the name and on behalf of the American Medical Association, shall prosecute the charges against the accused before the Judicial Council. The council shall have the power to acquit, admonish, suspend or expel the accused."

It was brought out, in the discussion before the committee, that many institutions in the United States are engaging in the practice of medicine. It was also brought out that some of these institutions are hospitals devoted to teaching medicine. It was also brought out that some of them are blessed with large endowments and yet are engaged in unethical practices. It was made apparent that local societies, in many instances, could not possibly administer the disciplinary provisions prescribed in the constitution and by-laws. It was, therefore, thought wise that the president of the American Medical Association should appoint a committee, or grand jury, who would investigate the practices of an institution when complaint is made and this grand jury would find a true bill or not a true bill. In the event of a true bill the committee would draw up the charges and then the president would appoint a prosecutor and the charges would be heard before the Judicial Council far removed from the influence of local prejudices or passions.

This particular problem has been under consideration for some time. Of course, the American Medical Association has control over its members only. Still it does have the power to grade medical schools and to grade hospitals used for teaching and post-graduate training and certainly a medical school engaged in unethical practices could not possibly receive a rating by the Council on Medical Education and Hospitals, nor could a hospital receive the approval of this council in the event it is engaged in unethical practices.

It is a bit strange that bigness sometimes

becomes arrogant and feels that it can ignore the fundamentals of right conduct. Yet it seems such has always been true. The fundamental fact is that an ethical sense in a human being makes democracy possible. If we throw away ethics, civilization goes with it. Without it, no well-ordered human society can exist.

THE ACTION OF THE HOUSE OF DELEGATES
OF THE AMERICAN MEDICAL ASSOCIATION
WITH RESPECT TO THE ILLNESS OF THE
PRESIDENT-ELECT, DR. TATE MASON

The House of Delegates of the American Medical Association was faced with a unique situation at the meeting at Kansas City. The by-laws provide that a president-elect is elected one year and that he be installed at the next meeting. There are no provisions for a vice-president elected to take the place of the president-elect in the event of his death or disability. A vice-president is elected to serve under the president who is installed at each regular meeting. He acts for the president in the event of death or disability.

Some practical reasoning suggested that the president-elect not be installed under the circumstances and that the president continue to serve as the by-laws provided until his successor is qualified. The House of Delegates took action to install Dr. Tate Mason *in absentia* and to elect a vice-president with the qualities necessary for the presidency. The action was a beautiful demonstration of the fact that doctors are a sympathetic lot. They sought and found a way to obey the dictate of high sentiment without committing a violation of our by-laws.

Though Dr. Tate Mason was incapacitated, and not only incapacitated, but, from current report, was probably on his death-bed, the delegates would not dare withhold from him and his family the honors he had justly earned.

We have formed the opinion that the public was impressed as they have not been impressed recently with the humane and sympathetic instincts doctors generally possess.

For the last few years doctors have been

portrayed by certain politicians or politico-social groups as hardhearted mercenaries. It always was a misrepresentation on their part made, of course, for their own political advancement. This action on the part of the House is eloquent testimony to the contrary.

DEATHS

Dr. B. M. Tittsworth, Jefferson City; Baltimore Medical College, 1897; aged 65; died May 11.

Dr. W. W. Core, Nashville; Vanderbilt School of Medicine, 1880; aged 77; died June 3.

NEWS NOTES AND COMMENTS

The third annual meeting of the Tennessee Radiological Society was held in Memphis on April 15. A luncheon was held at the Gayosa at 12:30. A brief program was presented by Dr. J. Cash King of Memphis and Dr. R. P. Ball of Chattanooga. A resolution was introduced and passed condemning the practice of certain hospitals, particularly in Memphis, who have been selling hospital insurance which included X-ray examination at reduced rates. This resolution was referred to the House of Delegates where it was also approved. The following officers to serve the year 1936-1937 were elected: Dr. John L. Hankins, President; Dr. H. S. Shoulders, Vice-President; Dr. Franklin B. Bogart, Secretary-Treasurer.

MEDICAL SOCIETIES

Campbell County:

The Campbell County Medical Society met in regular session at the Peoples Bank in La Follette on May 28. Upon due motion, Dr. W. B. Rose was unanimously elected to honorary life membership in the society. Dr. Rose has spent a long and useful life in this community, was one of the founders of the Campbell County So-

ciety in 1892, and served as its president for seventeen years.

Dr. R. B. Wood, of Knoxville, read a paper on "Congenital Heart Disease." Discussion opened by Dr. G. B. Brown.

Present at the meeting were members: G. B. Brown, M. L. Davis, H. S. Rule, J. W. Presley, R. W. Lewis, R. L. Galaher, J. P. Lindsey, C. E. Ausmus, H. W. Hollingsworth, and R. J. Buckman. Dr. W. Rufus Smith, of Knoxville, was a welcome visitor, together with the guest essayist, Dr. R. B. Wood.

(Signed) DR. R. J. BUCKMAN, *Secretary*.

Correction: In the May issue of the JOURNAL Dr. R. B. Howard was designated as an officer of the U. S. P. H. S. This was an error. Dr. Howard is director of the Anderson-Campbell Health Department under supervision of the State Health Department.

Carroll, Henry, and Weakley Counties:

The Tri-County Medical Society met on June 9 in Paris. The speakers were Dr. E. Lee Meyers and Dr. William E. Jost, St. Louis.

Preceding the program the physicians of Paris were hosts of a luncheon given at Greystone Hotel to the visiting members.

Davidson County:

May 12—"Clinical and Neuropathological Aspects of Electrical Injuries," by Dr. Leo Alexander, Department of Neurology, Harvard Medical School, Boston.

May 19—"Menstrual Disorders," by Dr. J. C. Burch. Discussion opened by Dr. G. S. McClellan.

May 26—"The Treatment of Fractures, with Especial Reference to Ununited Fractures," by Dr. George Hendon, professor of surgery, University of Louisville, Kentucky.

Dyer, Lake, and Crockett Counties:

On Wednesday, June 3, the Dyer, Lake, and Crockett County Medical Society met on Reelfoot Lake. The following papers were read:

"Cancer of the Cervix," by Dr. W. C. Dixon, Nashville. "Treatment of Coronary Thrombosis and Angina Pectoris," by Dr.

(Continued on page 246)

COMMITTEES

The following is a list of the standing committees of the Tennessee State Medical Association provided for in the constitution and by-laws and appointed by the proper authority, together with some special committees appointed under the authority of a resolution by the House of Delegates.

Some of the committees are appointed for a definite period. In such instances the appointment of the committeeman expires with the meeting of the House of Delegates in the year stated opposite his name.

COMMITTEE ON SCIENTIFIC WORK

H. H. Shoulders, Chairman, Nashville.
A. F. Cooper, Memphis.
Frank Harris, Chattanooga.
A. H. Lancaster, Knoxville.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

L. W. Edwards, Chairman, Nashville (1939).
E. W. Cocke, Bolivar (1941).
Battle Malone, Memphis (1940).
Tom Barry, Knoxville (1938).
T. R. Ray, Shelbyville (1937).

LIAISON COMMITTEE

W. C. Dixon, Chairman, Nashville (1941).
W. P. Wood, Knoxville (1940).
Hiram A. Laws, Chattanooga (1939).
Tom Mitchell, Memphis (1938).
J. L. Raulston, Knoxville (1937).

STATE TUBERCULOSIS HOSPITAL COMMISSION

W. S. Rude, Chairman, Ridgeway.
O. N. Bryan, Nashville.
C. M. Oberschmidt, Memphis.
J. L. Hamilton, Chattanooga.

HOSPITAL COMMITTEE

D. R. Pickens, Chairman, Nashville.
E. H. Baird, Dyersburg.
H. Quiggs Fletcher, Chattanooga.
Kyle Copenhaver, Knoxville.
H. B. Everett, Memphis.
Lee Gibson, Johnson City.

COMMITTEE ON INSURANCE

A. F. Cooper, Chairman, Memphis.
C. M. Hamilton, Nashville.
S. R. Miller, Knoxville.

COMMITTEE ON MEDICAL DEFENSE

S. R. Miller, Chairman, Knoxville.
H. B. Everett, Memphis.
H. M. Tigert, Nashville.

ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

Not yet appointed.

SUPERVISORY COMMITTEE

(Representing the Tennessee State Medical Association)

J. R. Reinberger, Memphis.
O. S. Warr, Memphis.
F. B. Bogart, Chattanooga.
J. O. Manier, Nashville.

COMMITTEE ON EDUCATION

O. S. Warr, Chairman, Memphis (1938).
R. B. Wood, Knoxville (1938).
W. G. Kennon, Nashville (1937).
J. Marsh Frere, Chattanooga (1937).
W. O. Baird, Henderson (1939).
J. M. Lee, Nashville (1939).

The following committees are expected to serve under the supervision of the Committee on Education:

(A) COMMITTEE ON MATERNAL WELFARE

J. R. Reinberger, Chairman, Memphis.
M. S. Lewis, Nashville.
H. B. Hewitt, Chattanooga.
Andrew Smith, Knoxville.

(B) COMMITTEE ON CHILD WELFARE

W. D. Anderson, Chairman, Chattanooga.
Oliver Hill, Knoxville.
H. G. Bradley, Nashville.
W. L. Rucks, Memphis.

(C) CANCER COMMITTEE

Ralph Monger, Chairman, Knoxville.
S. J. Sullivan, Cleveland.
Howard King, Nashville.
H. S. Shoulders, Nashville.
J. W. McClaran, Jackson.
Frank Smythe, Memphis.

(D) COMMITTEE ON PHYSICAL THERAPY

A. H. Meyer, Chairman, Memphis.
W. E. Van Order, Chattanooga.
J. F. Hamilton, Memphis.
R. W. Billington, Nashville.
J. P. Gilbert, Nashville.

LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. W. L. Williamson, 915 Madison Avenue, Memphis.
 Vice President for West Tennessee—Dr. J. E. Powers, Jackson.
 Vice President for Middle Tennessee—Dr. J. O. Walker, Franklin.
 Vice President for East Tennessee—Dr. Lec K. Gibson, Johnson City.
 Secretary-Editor—Dr. H. H. Shoulders.
 Assistant Secretary-Editor—Dr. W. M. Hardy.

TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.
 Dr. A. F. Cooper, Goodwyn Institute Building, Memphis.
 Dr. E. R. Zemp, Walnut Street, Knoxville.
 Dr. Franklin B. Bogart, Medical Arts Building, Chattanooga.
 Dr. John B. Steele, Volunteer Building, Chattanooga.

COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.
 Second District—Dr. S. R. Miller, Knoxville.

Third District—Dr. Hiram A. Laws, Jr., Chattanooga.
 Fourth District—Dr. J. T. Moore, Algood.
 Fifth District—Dr. John W. Sutton, Petersburg.
 Sixth District—Dr. L. W. Edwards, Nashville.
 Seventh District—Dr. C. D. Walton, Mt. Pleasant.
 Eighth District—Dr. J. R. Thompson, Jackson.
 Ninth District—Dr. E. H. Baird, Dyersburg.
 Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—

Dr. E. G. Wood, Knoxville; East Tennessee.
 Dr. H. H. Shoulders, Nashville; Middle Tennessee.
 Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—

Dr. E. T. Newell, Chattanooga; East Tennessee.
 Dr. J. O. Manier, Nashville; Middle Tennessee.
 Dr. E. C. Ellett, Memphis; West Tennessee.

OFFICERS OF COUNTY MEDICAL SOCIETIES

COUNTY	PRESIDENT	VICE PRESIDENT	SECRETARY-TREASURER
Anderson	Edward Dickson, Coal Creek	W. B. Barton, Briceville	J. S. Hall, Clinton
Bedford	Alfred Farrar, Shelbyville	W. W. Reed, Belfast	W. H. Avery, Shelbyville
Blount	L. C. Olin, Maryville	H. A. Callaway, Maryville	W. C. Crowder, Maryville
Bradley	J. L. McClary, Cleveland	W. C. Stansberry, Charleston	Claud Taylor, Cleveland
Campbell	A. A. Baird, Pruden	M. L. Davis, Caryville	R. J. Buckman, LaFollette
Carroll	E. W. Hillsman, Trezevant		J. H. Williams, McKenzie
Carter	E. T. Pearson, Elizabethton	J. B. Shoun, Elizabethton	E. L. Caudell, Elizabethton
Chester, Henderson, and Decatur	C. H. Johnson, Lexington	J. L. McMillen, Decaturville	L. C. Smith, Henderson
Coke	Drew A. Mims, Newport	Chas. Rubie, Newport	J. E. Hampton, Newport
Cumberland	E. W. Mitchell, Crossville		V. L. Lewis, Crossville
Davidson	H. S. Shoulders, Nashville	H. L. Douglas, Nashville	J. P. Gilbert, Nashville
Dickson	L. F. Loggins, Charlotte		R. P. Beasley, Dickson
Dyer, Lake, Crockett	R. C. Newkirk, Tiptonville	John E. Frazier, Newbern (Dyer)	C. L. Denton, Dyersburg
Fayette-Hardeman	L. D. McAuley, Oakland	R. W. Griffin, Tiptonville (Lake)	A. Richards, Bolivar
Fentress	C. A. Collins, Wilder	Leon Pope, Grand Junction	J. P. Sloan, Jamestown
Franklin	W. F. Smith, Decherd	A. H. Crouch, Fobus	J. P. Fox, Jr., Greeneville
Gibson	L. H. Montgomery, Trenton	A. P. Smith, Winchester	T. F. Taylor, Monteagle
		H. P. Clemmer, Milan	J. F. Campbell, Morristown
Giles	R. E. Warren, Pulaski	J. G. Waldrop, Lewisburg	J. Marsh Freere, Chattanooga
Greene	N. H. Crews, Greeneville	R. S. Cowles, Greeneville	
Grundy	U. B. Bowden, Pelham	O. H. Clements, Palmer	
Hamblen	P. L. Henderson, Morristown	P. L. Brock, Morristown	
Hamilton	D. M. Williams, Chattanooga	E. A. Gilbert, Chattanooga	
Hasdin, Lawrence, Lewis, Perry, and Wayne	W. E. Boyce, Flatwoods	J. H. Taylor, Morris Chapel (Hardin)	O. H. Williams, Savannah
		J. W. Danley, Lawrenceburg (Lawrence)	
		Paul Wiley, Hohenwald (Lewis)	
		W. E. Turner, Lobelville (Perry)	
		D. L. Woods, Waynesboro (Wayne)	
Haywood	A. H. Sorrell, Brownsville	John C. Thornton, Brownsville	Roy M. Lanier, Brownsville
Henry	A. F. Paschall, Puryear	Elroy Scruggs, Paris	R. Graham Fish, Paris
Hickman	L. F. Pritchard, Only	C. V. Stephenson, Centerville	W. K. Edwards, Centerville
Humphreys			W. W. Slayden, Waverly
Jackson	J. D. Quarles, Whitleyville	R. C. Gaw, Gainesboro	F. B. Clark, Gainesboro
Knox	M. S. Roberts, Knoxville	John R. Smoot, Knoxville	Jesse C. Hill, Knoxville
Lauderdale	Thos. F. Pipkin, Henning	J. H. Nunn, Ripley	Thos. E. Miller, Ripley
Lincoln	H. K. Alexander, Fayetteville	R. E. McCown, Fayetteville	M. F. Brown, Fayetteville
Macon	D. D. Howser, Lafayette	P. East, Lafayette	J. Y. Freeman, Lafayette
Madison	J. C. Pierce, Mercer	John E. Powers, Jackson	S. M. Herron, Jackson
Maury	D. B. Andrews, Columbia	O. C. Fowler, Spring Hill	C. D. Walton, Mt. Pleasant
		H. C. Busby, Columbia	
McMinn			L. A. Brendle, Englewood
McNairy	John R. Smith, Selmer	G. B. Curry, Selmer	H. C. Sanders, Selmer
Monroe	T. M. Roberts, Sweetwater	J. A. Hardin, Sweetwater	W. J. Cameron, Sweetwater
Montgomery	F. A. Martin, Cumberland City	R. M. Workman, Clarksville	Philip L. Lyle, Clarksville
Obion	W. B. Harrison, Union City	Har Glover, Union City	Frank B. Kimzey, Union City
Overton			A. B. Qualls, Livingston
Polk	W. Y. Gilliam, Copperhill	W. C. Strauss, Copperhill	F. O. Geisler, Isabella
Putnam	J. Fred Terry, Cookeville	W. A. Howard, Cookeville	Thurman Shipley, Cookeville
Roane	F. D. Owings, Rockwood	T. L. Bowman, Harriman	W. W. Hill, Harriman
Robertson	W. F. Fyke, Springfield	E. W. Adair, Springfield	W. S. Rude, Ridgeway
Rutherford	J. D. Hall, Readyville	B. W. Rawlins, Murfreesboro	J. A. Scott, Murfreesboro
Scott			D. M. Woodward, Winona
Sevier	R. J. Ingle, Sevierville	C. P. Wilson, Sevierville	R. C. Kash, Sevierville
Shelby	Robin F. Mason, Memphis	F. W. Smythe, Memphis	A. F. Cooper, Memphis, Secretary
	O. S. Warr, Memphis, President-Elect		J. J. Hobson, Memphis, Treasurer
Smith	Rhea E. Garrett, Dixon Springs	J. G. Bridges, Gordonsville	Thayer S. Wilson, Gordonsville
Sullivan and Johnson	W. H. Reed, Kingsport	D. D. Vance, Bristol (Sullivan)	T. R. Bowers, Bristol
		R. O. Glenn, Mountain City (Johnson)	
Sumner	C. D. Giles, Gallatin	L. A. Absher, Portland	Harold Kelson, Gallatin
Tipton	A. J. Roby, Covington	L. J. Lindsey, Covington	H. C. Currie, Covington
Warren	John S. Harris, McMinnville	E. L. Mooneyham, Rock Island	John T. Mason, McMinnville
Washington	W. M. Bevis, Johnson City	J. L. Hankins, Johnson City	C. H. Long, Johnson City
Weakley	J. A. Moore, Sharon	G. C. Thomas, Greenfield	P. W. Wilson, Dresden
White	S. E. Gaines, Sparta	Vernon Hutton, Ravenscroft	A. F. Richards, Sparta
Williamson	R. H. Hutcheson, Franklin	M. Knox Galloway, Franklin	K. S. Howlett, Franklin
Wilson	L. L. Tilley, Lebanon	M. H. Wells, Watertown	R. B. Gaston, Lebanon

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Lyle Motley, Memphis. "Point in Diagnosis of Acute Abdominal Conditions," by Dr. H. H. Shoulders, Nashville.

Hamilton County:

On July 2 Dr. E. T. Newell will discuss "Radium and Deep Therapy in the Treatment of Malignancies."

On July 15 Dr. Edward Wm. Alton Ochsenr. New Orleans, Louisiana, will deliver an address.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

On May 26 physicians of the Five-County Medical Society met in Waynesboro.

The following papers were read:

"Maternal Mortality," by Dr. J. W. Irwin, Savannah. "The Importance of Early Medical Care in Pregnancy," by Dr. R. A. Wallace, Memphis.

"Prenatal Care," by Dr. Sam C. Cowan, Nashville. "Obstetrics a Community Problem," by Dr. Milton Smith Lewis, Nashville. "Maternitas," by Dr. W. T. Pride, Memphis.

Knox County:

May 12—"Pulmonary Suppuration," by Dr. Herbert Acuff. Discussion was led by Drs. Chumley, Naive, and Rufus Smith.

May 19—"The Use of Convalescence Serum in Pediatrics," by Dr. Joe T. Smith. Discussed by Drs. Tharp, Long, and R. B. Wood.

May 26—"The Treatment of Inflammatory Pelvic Conditions," by Dr. E. M. Edington. Discussion led by Drs. Smith, Pope, and Young.

June 2—"Conjunctivitis in the Newborn," by Dr. F. S. LeTellier. Discussed by Drs. Jenkins, Leach, and Christenberry.

Sullivan-Johnson Counties:

A meeting of the Sullivan-Johnson County Medical Society was held in Bristol, June 3. The invited guest speakers were Dr. Michael L. Mason, Northwestern University, Chicago, subject, "Infections of the Hand," and Dr. R. C. Derivaux, Nashville, "Recent Advances in the Management of Diabetes Mellitus."

OTHER MEDICAL SOCIETIES

The Kentucky State Medical Association will meet in Paducah on October 5, 6, 7, and 8. Dr. E. L. Henderson, chairman of the Program Committee, Louisville, is extending a cordial invitation to every member of the Tennessee State Medical Association to attend this meeting.

VANDERBILT UNIVERSITY MEDICAL SOCIETY MAY 1, 1936

1. Case Report: "Intestinal Obstruction in an Infant Due to Abdominal Meconium," by Dr. Katherine Dodd.

A case of intestinal obstruction due to gelatinous, puttylike meconium is reported in a newborn infant. Except for the contents of the gut, the only abnormal finding at post-mortem examination was an interstitial pancreatitis. Twenty-one cases showing similar cause of intestinal obstruction have been reported in the literature. In the six cases where a complete post-mortem examination was done abnormalities in either the liver or the pancreas were found. It seems probable that failure of the secretion of either liver or pancreas to reach the intestine is at least part of the cause of meconium ileus.

2. "The Diagnosis and Classification of Menstrual Disorders," by Drs. G. S. McClellan, Eugene T. Ellison, Claude Johnson, and John C. Burch.

Functional disturbances of menstruation are the result of an ovarian disturbance which may be either primary or secondary. The changes in the endometrium indicate the degree of the ovarian dysfunction. The determination of the ultimate cause of the ovarian condition is made from a study of the patient's metabolism. On the basis of these findings menstrual disturbances are classified.

Paper discussed by Drs. Morgan and Barr.

3. "The Prevalence of Low Serum Proteins Among Pediatric Patients," by Dr. Katherine Dodd, Dr. Ann Minot, and Miss Margaret Keller.

Edema of nutritional origin is a fairly

common finding among the children in our clinic group. A study of 500 children showed a relatively low level of serum albumin to be even more common. We believe that this finding shows that many of the children are chronically underfed. Although the depression, the prevalence of diarrhea, and the incidence of infection undoubtedly are contributory causes of the low levels of serum albumin, chronic poverty, ignorance, and poor dietary habits appear to be the main cause.

Paper discussed by Dr. Youmans.

Middle Tennessee Medical Association:

The Middle Tennessee Medical Association met in Shelbyville, May 21 and 22. Officers elected were: Drs. J. C. Pennington, Nashville, President; W. H. Avery, Shelbyville, Vice-President; and D. W. Smith, Nashville, Secretary-Treasurer.

Upper Cumberland Medical Society:

The Upper Cumberland Medical Society will meet in Red Boiling Springs, June 16 and 17. The scientific program is as follows:

OPENING EXERCISES

House called to order by Chairman of Committee on Arrangements at 10 a.m.

Invocation by Rev. B. M. Harness.

Announcements by chairman of committee as to the evening session and the various items of entertainment, and the society placed in the hands of the president, E. B. Clark, M.D., Sparta.

NIGHT SESSION

Welcome address by C. C. Davis, Red Boiling Springs.

Response by W. J. Breeding, M.D., Nashville.

President's address, "State Medicine."

Paper, "Social Security and the Medical Profession," by Dr. Arthur McCormack, secretary of Kentucky State Board of Health.

SCIENTIFIC PROGRAM

(Each essayist limited to twenty minutes. Discussion to five minutes.)

1. "Malarial Fever and Its Treatment," by Thayer S. Wilson, M.D., Gordonsville.

Discussion by E. L. Mooneyham, M.D., Rock Island; Jack Witherspoon, M.D., Nashville.

2. "Recent Advances in the Management of Diabetes Mellitus," by R. C. Derivaux, M.D., Nashville. Discussion by S. E. Gaines, M.D., Sparta; O. N. Bryan, M.D., Nashville.

3. "A New Method for Transurethral Prostatic Resection," by J. B. Neal, M.D., Knoxville. Discussion by Henry Douglas, M.D., Nashville; Perry Bromberg, M.D., Nashville.

4. "Advantageous Neurotic Reactions," by William E. Gardner, M.D., clinical professor of psychology, University of Louisville, Louisville, Kentucky. Discussion by W. S. Farmer, M.D., Central State Hospital, Nashville; R. E. Lee Smith, M.D., Doyle.

5. "The Acute Abdomen," by S. T. Ross, M.D., Nashville. Discussion by Beverly Douglas, M.D., Nashville; W. M. Johnson, M.D., Sparta.

6. "Abdominal Pain in Children" (lantern slide demonstration), by W. L. Rucks, M.D., Memphis. Discussion by Owen Wilson, M.D., Nashville; J. R. Gott, M.D., Murfreesboro.

7. "Routine versus Complete Blood Examination," by C. C. Turner, M.D., Glasgow, Kentucky. Discussion by W. M. Litterer, M.D., Nashville; Herman Spitz, M.D., Nashville.

8. "Vaccine in the Prevention and Treatment of Whooping Cough," by J. M. Lee, M.D., Nashville. Discussion by J. Perry Sloan, M.D., Jamestown; W. A. Howard, M.D., Cookeville.

9. "A Study of Toxemia of Late Pregnancy," by E. G. Woods, M.D., Knoxville. Discussion by Harlan Tucker, M.D., Nashville; R. C. Gaw, M.D., Gainesboro.

10. "Conquest of Pain" (with slides), by C. C. Howard, M.D., Glasgow, Kentucky. Discussion by Duncan Eve, Jr., M.D., Nashville; Thurman Shipley, M.D., Cookeville.

11. "Convulsions of Infancy and Childhood," by J. S. Campbell, M.D., Lebanon. Discussion by V. L. Lewis, M.D., Crossville; Alex B. Shipley, M.D., Tazewell.

12. "Headache as a Symptom," by W. A. Weldon, M.D., Glasgow, Kentucky. Dis-

cussion by A. F. Richards, M.D., Sparta; Willard Steele, M.D., Chattanooga.

13. "Treatment of Appendicitis Complicated by Peritonitis," by Thurman Shipley, M.D., Cookeville. Discussion by C. S. McMurray, M.D., Nashville; W. M. McCabe, M.D., Nashville.

14. "Diagnosis and Treatment of Some of the More Common Brain Lesions," by Franklin Jelsma, M.D., Louisville, Kentucky. Discussion by Thos. D. McKinney, M.D., Nashville; T. G. Pollard, M.D., Nashville.

15. "Treatment of Hay Fever and Its Allied Conditions by Ionization," by W. W. Wilkerson, Jr., M.D., Nashville. Discussion by Herschell Ezell, M.D., Nashville; Leslie Bryan, M.D., Nashville.

16. "Kidney Infections," by Owsley Grant, M.D., professor urology, University of Louisville Medical School, Louisville, Kentucky. Discussion by J. C. Pennington, M.D., Nashville; H. G. Gayden, M.D., Nashville.

17. "Fractures," by R. A. Griswahl, M.D., Louisville, Kentucky. Discussion by George K. Carpenter, M.D., Nashville; A. G. Nichol, M.D., Nashville.

18. "Our Pneumonia Problems and Report of Cases in the Recent Epidemic," by J. T. Moore, M.D., Algood. Discussion by Fred Terry, M.D., Cookeville; Edd Clark, M.D., Willow Grove.

19. "The Essentials in Management of Diagnosis and Treatment in the General Practice of Medicine," by Milton W. Williams, M.D., Red Boiling Springs. Discussion by J. P. Keller, M.D., Nashville; J. O. Manier, M.D., Nashville.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Gas-Air Analgesia as an Aid to Anesthesia in Children. R. J. Minnitt, *The Liverpool Medico-Chirurgical Journal*, Vol. XLIII, 1935.

Mental agony can be inflicted in giving an anesthetic to children. The anesthetist should always remember that a second anesthetic may have to

be administered. There is nothing that frightens a child more than to have a mask placed upon the face. The author states that nitrous oxide is heavier than air. Due to this fact the mask may be held above the face, but not in contact with it. The mixture of nitrous oxide and air is sufficient to produce sleep. Then the mask may be lowered to the face and surgical anesthesia produced either by the continuation of nitrous oxide or changing to ether.

Three colored discs are painted upon the mask and the child told to watch them. When the child's attention is focused on these colored discs nitrous oxide is allowed to flow slowly in a 100 per cent concentration. This method can be used in the prone or sitting position. The author illustrates his method by a series of cases. Some of these children were sleeping when the anesthetic was administered and on awakening never realized that they had been anesthetized.

DERMATOLOGY

By E. E. BROWN, M.D.
Doctors Building, Nashville

Lymphedema Occurring with Varicose Veins, Treatment by Injection. H. I. Biagsleisen, M.D., New York, *Archives of Dermatology and Syphilology*, April, 1936.

The author points out the apparent connection between the epithelial, venous, and lymphatic system. He calls attention to the fact that infection beginning in one will eventually affect all three. In varicose veins the skin and subcutaneous tissue often becomes very much altered and a peculiar disabling lesion appears and grows to alarming proportion. At first there is a hardened, tender, purplish or brown area usually located on the inner side of the lower half of the leg. In later stages this patch spreads and ulcerates. In the beginning there is a phlebitis followed by a lymphatic infection with blockage and lymphedema. Later there is fibrosis with ulceration. The infection may get in in one of several ways, but the end result is the same. This type of lymphedema he calls pseudo-elephantiasis to distinguish it from filariasis. He claims that it occurs frequently and that no case of varicophlebitis exists long without it.

The pathology of the treatment is gone into. The principle of his treatment is to open the strangulated lymphatic and capillary circulation. The following technic has been used over five hundred times: It is done by injections of an isotonic solution (Lock's Modification) through a large bore needle (13 gauge) directly into the lymphedematous area. Injections were given as often as possible since they did not inconvenience the patient, produce any reaction or stir up the latent residual infection present. The clinical results were striking. The pain and lymphedema began to disappear at once and tissues became softer. All ulcers

invariably healed. The earlier the treatment is instituted the quicker the results.

His results have been so gratifying he hopes his report will encourage others to further study.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 316 Doctors Building, Nashville

A Clinical Study of the Effect of Camphor-in-Oil on Lactation. Milton D. Klein, M.D., New York, N. Y., *Am. J. Obst. and Gynec.*, May, 1936, 31: 894.

Camphor-in-oil has been used on selected postpartum patients at the Morrisania City Hospital the past few months. Ninety out of one thousand patients were studied and the clinical effects of camphor on the breasts observed.

Indications for interrupting lactation were prematurity with dead baby, unwed mothers, monstrosities, tuberculosis, stillbirths, cardiac disease, eclampsia, pneumonia, sepsis, breast tumor, and cracked nipples.

Two doses of camphor-in-oil, one and one-half grs. each, were given intramuscularly (into the buttock) the first day and one injection a day for three successive days, making the total number of injections five. Ice bags, cathartics, binders, and restriction of fluids were avoided.

Thirty patients were used as controls (group 1). These patients did not receive camphor nor were any other procedures carried out. Predominant mammary reaction began the second day post partum, reached its height the third or fourth day, persisted thirty-six hours, then gradually subsided to the nonlactating state the eighth or ninth day.

The author found that camphor-in-oil given within the first twenty-four hours after delivery prevented eighty per cent of the ninety patients studied from developing breast engorgement and when given after full engorgement of the breast, the duration of engorgement was reduced to twelve hours instead of the usual four to five days.

Fifty additional patients were given larger doses of camphor-in-oil (three grs. twice during the first day) with more effective results in preventing lactation. The sooner the injections are started post partum the more effective is the action.

The Control of Morbidity and Mortality Following Pelvic Surgery. Walter T. Dannreuther, M.D., F.A.C.S., New York, N. Y., *Surg., Gynec. and Obst.*, May, 1936, 62: 791.

In a previous paper (January, 1930) the author surveyed one thousand consecutive personal operative cases. No patient was denied surgical relief solely because of an unfavorable prognosis. Each operator may reduce his morbidity and mortality by scrutinizing the details of successive groups of his own patients.

In this second series of one thousand consecutive cases it has been possible to effect a thirty-four

per cent reduction in morbidity and a fifty-seven per cent reduction in mortality by observing the following observations (the second series of one thousand shows morbidity in fifty-three patients and eight patients died):

Gentleness in separating bowel adhesions, recognition of endometriosis of the rectovaginal septum, refusal to irradiate any patient suspected of harboring a latent pelvic infection, careful peritonealization of raw surfaces, and the use of sheets of gutta-percha tissue to cover surfaces that cannot be peritonealized will obviate fecal fistulas and postoperative intestinal obstruction.

The routine administration of ten per cent carbon dioxide in oxygen just before the completion of the operation will minimize the incidence of pulmonary complications in general and pneumonia in particular.

Dehiscence of an abdominal wound is probably due to tissue hunger and proteolytic digestion of catgut before fibroplastic production is sufficient to splint the wound rather than to defective suture material.

Approximation of the vaginal fibers of the levator ani muscles with kangaroo tendon and a subcuticular suture of the skin margin evidently minimize perineal wound infections.

Keeping the bladder free from residual urine lessens the incidence of postoperative cystitis. Residual urine is more of a menace than aseptic catheterization.

Postponing elective operations until the cardiovascular system is in the best possible condition, and the frequent practice of active motion of the extremities throughout convalescence will practically eliminate postoperative embolism.

Removing the uterus by applying clamps instead of preliminary ligature is a safe procedure.

Preoperative blood transfusions should be utilized in all cases of anemia, debility, or sepsis.

Invasion of the cellular connective tissue of the parametrium for the removal of intraligamentary tumors predisposes to subsequent parametritis.

Glucose should always be administered intravenously, never subcutaneously.

It should be the aim of every pelvic surgeon to limit his postoperative morbidity and mortality to an irreducible minimum.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

A Bacteriological Study of Gonococcal Ophthalmia. I. A. Mohamed, *American Journal of Ophthalmology*, May, 1936.

The author set out to determine the dates of disappearance of gonococci from the conjunctiva after an attack of purulent ophthalmia, using Gram's and Giemsa's stains. The discharge usually ceased two or three days before the conjunctival

smear was negative for gonococci. Smears of conjunctival secretion became negative or scantily positive long before Giemsa-stained epithelial scraping showed any tendency to become negative. No case could be kept under observation longer than one month. Right up to the last day of observation epithelial scrapings showed some cells heavily infected with gonococci. Biologic and serologic characteristics were studied, and complex tables are presented. The ophthalmic gonococcus is more readily isolated and subcultured than the urethral strains. Gonococci are classified into two main groups according to their antigenic complexity.

PEDIATRICS

By JOHN M. LEE, M.D.

Doctors Building, Nashville

Acute Appendicitis in Children. Philip F. Barbour, M.D., Louisville, Ky., Southern Med. Jour., May, 1936.

Appendicitis has been recorded in babies less than forty-eight hours old. The greatest incidence is in the second decade of life, and the greatest mortality is in the two extremes of life. As a result of anomalous development of the intestinal tract the appendix may not lie in the usual position. It is less well developed in the child, richer in lymphatic tissues, more easily infected, and more liable to gangrene and rupture than in older patients.

Diarrhea, ileocolitis, trauma, intestinal parasites, lack of vitamins A and B and preceding infections are mentioned as possible etiologic factors. Streptococci and colon bacilli are the organisms usually present.

Diagnosis depends upon pain in the abdomen, localized tumor in the lower right quadrant, nausea and vomiting, slight rise in temperature and rapid pulse. A child's complaint of pain is notoriously unreliable as to location and degree. Under mental stress the young patient may deny pain or locate it at any point, being found on the left side more often in children than in adults. "Always examine the back when a child complains of pain in the belly," for the cause of the pain may be pneumonia or pleurisy. Tenderness varies with the location of the appendix, occurring high up near the liver, back in the region of the kidney, centrally over the bladder, or in the usual location.

The pain from appendicitis must be differentiated from that which results from acute respiratory infections, pyelitis, or other kidney disorders, plumbism, lesions of the spinal cord, and column and allergy.

While a mass in the lower right quadrant may not be felt rarely is tenderness over the appendix absent, with rigidity to a greater or less degree. Pressure at any point over the abdomen with sudden release intensifies the pain over the appendix. If the diseased appendix lies on the psoas or iliacus

muscle, extension of the leg or rotation of the right thigh will cause pain. Rectal examination may elicit pain in the right pelvis and sometimes a tumor mass.

Amebic dysentery involving the ascending colon may simulate appendicitis, but rarely will bloody stools occur in an attack of uncomplicated appendicitis. Blood counts are useful but not diagnostic, though the Schilling differential leucocyte count may be significant of pathology with a low leucocyte count.

Nausea, vomiting, temperature rise, and accelerated pulse are common to most illnesses of children and are not significant unless present with the above noted signs and symptoms.

An early diagnosis insures less risk from surgery.

SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.

1400 Monroe Avenue, Memphis

Postoperative Abdominal Distention and Its Treatment. Gilson Colby Engel, Surg. Clinics of North America, April, 1936.

In reviewing the possible causes of postoperative distention the author considers the type of patient, *i. e.*, whether nervous, tense and apprehensive or phlegmatic and flaccid, as a factor which is almost impossible to remedy. In the preoperative preparation of a patient when there is purging, there is more likelihood of getting a postoperative distention. Withholding fluids ten or twelve hours prior to the operation seems to have a preventive action. The type of anesthesia apparently does not have any effect, although Potter, Cunningham and Meuller disagree with the author in this respect. The operation itself is one of the most important factors to consider. Upper abdominal operations are more prone to have distention than those in the lower abdomen. Tissues should be handled very gently and a minimum of trauma inflicted to get a minimum amount of postoperative distention. The author believes that distention occurs less often after gastrointestinal tract operations because one defers the giving of fluids longer than in other types of operations.

In the postoperative treatment liquids should be withheld for twenty-four hours. At the first sign of nausea after operation a Jutte or Levine tube should be passed and left in place. Twelve or twenty-four hours later the tube is clamped for intervals and water and then clear broth and tea may be given. If these are retained the tube is taken out. During this time an intermittent or continuous venoclysis of five per cent glucose in normal saline is given. The author believes in giving morphine in sufficiently large doses. Frequent turning of the patient is important.

When the distention occurs it is either a simple

distention, adynamic ileus, mechanical obstruction or peritonitis. In treating the first two a Jutte or Levine tube is passed into the stomach and left in place and a suction is attached. The tube is irrigated frequently. When the symptoms have subsided the tube is clamped and fluids given in small quantities. If these are well tolerated, the tube may be removed. Morphine is given for comfort and 1 250 grain of scopolamine is added to every other dose. Glucose five or ten per cent in normal saline is given by vein in amounts from 2,000 to 2,500 cc. in twenty-four hours. The blood chloride should be frequently checked. The author feels that enterostomy is useless and that drugs are of very little if any value in this condition.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.

By G. A. WILLIAMSON, JR., M.D.

Medical Building, Knoxville

Prevention of Recurrent Renal Calculi. C. C. Higgins, Jour. Urology, May, 1936.

One of the most serious complications in lithiasis is the recurrent formation of renal calculi. Surgery should be considered only a phase in the management of renal lithiasis. Complete investigation of factors associated with the formation of calculi is essential if they are to be eliminated following operation.

Recurrent lithiasis may be classed in two groups (Herbst): True recurrent formation of a stone after complete removal of the original, and false recurrence, or the persistence of stones or fragments of calculi which were overlooked at operation.

The type of stone influences the tendency to recurrent formation of calculi. In this series recurrence was more frequent if the stone was quite

soft. Recurrences are more prone to occur when the stone extends into the calyces.

Pelviolithotomy has become the choice of surgery for removal of stones from the pelvis except when more extensive surgery is required. However, the procedure should always be as conservative as possible.

Foci of infection should not be neglected following operation. When the infection is in the genitourinary tract, a complete study of the offending organism is required, and it is of great importance to ascertain whether it has the urea-splitting property. If colon bacillus infection or a mild staphylococcus infection is not eradicated by urinary antiseptics, the ketogenic diet should be used.

Stasis must be eliminated by ureteral dilatation or other required procedures.

Vitamin A should be prescribed postoperatively to overcome vitamin A deficiency if it is present, and because of its specific effect upon the epithelial structures.

Attention has been drawn to relationship between hyperparathyroidism and lithiasis. If hyperparathyroidism is present, exploration of the parathyroid glands is indicated, and the removal of a parathyroid tumor will prevent a recurrence of the calculi which were due to this cause.

He believes that recurrent formation of calculi could be minimized by use of dietary treatment which he gives in detail.

In their experience recurrent calculi are composed chiefly of calcium and magnesium phosphate, carbonates, and traces of oxalates. These calculi form in an alkaline urine, and by shifting the reaction to acid their recurrent formation should be minimized.

The incidence of recurrent lithiasis has been reduced from 16.4 to 4.7 in the past three years since adding the dietary regimen to the post-operative care.

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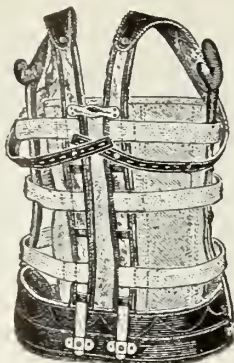
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AFEBRILE EXHAUSTIVE PSYCHOSIS FOLLOWING SICKNESS*

JESSE C. HILL, M.D., Knoxville

FOR THE REASON that the usual paper given by one who specializes in mental and nervous diseases is so technical and brings out ideas that the general practitioner or specialist himself does not understand, I have endeavored in writing this paper to put before you a picture that is easily interpreted and appreciated.

We have a patient who has had some acute illness or condition, some chronic condition or some operation, who gets along nicely, no temperature, eating, sleeping well or at least fairly well, and gradually or suddenly something happens, the patient develops a mental condition. Some authorities say a toxin has been elaborated or a general disturbance in the metabolism or an intermediate agent, a metatoxin, or that the neurons in their own destruction or inimical agencies cause biochemical changes or degenerative changes in the cerebral cortex or morphological changes in the chromatin substance. Of those mentioned, wearing out of substance of the body and the formation of certain poisons which result from the breaking down of tissue are the most feasible, but there is a suggested cause which seems more reasonable to all of us who make a special study of these conditions. It is something the chemist, pathologist, bacteriologist, surgeon, internal medicine man, neurologist, or psychiatrist cannot put their hands on. What is it? It

is the individual make-up of the patient. Why will two patients of apparently the same physique have the same type of pneumonia, same doctor, same nurse, and one patient die and the other get well? Two fraternity brothers, one large and one small in stature, drink same amount of whiskey, the big boy gets drunk and the little fellow cannot feel it and wants more. Two bankers misuse their depositors' money (no, not intentionally but purposely), one commits suicide and the other one soon becomes the president of another bank. Do you get it? The background by some means or another is fertile.

Afebrile exhaustion may follow starvation, improper diet, mental and physical shock, loss of blood, protracted insomnia, typhoid, puerperal state, prolonged convalescence from influenza, pneumonia, and tuberculosis.

All human beings have certain make-ups, and when one is unfortunate enough to become mentally sick, the symptoms will be largely according to what one's make-up is. They will be either of a schizoid, cycloid, or paranoid personality. Therefore, if a patient has an afebrile psychosis, he will behave according to his make-up. Some will behave like manic-depressives, some like schizophrenia, while others like paranoiacs.

In this condition we are usually confronted with two types, classified as to severity and duration.

First—The Collapse Exhaustion.

*Read before the Tennessee State Medical Association, Memphis, Tennessee, April 15, 1936.

Ushered in by a feeling of impending danger, dysphoria, confusion, impaired orientation, increased psychomotor activity, have hallucinations and delusions of all types, may become violent, gastrointestinal disturbances, especially anorexia and sometimes diarrhea, most always an albuminuria, prostration, and coma. The duration of this type is from three to fourteen days.

Second—The Confused Delusio-Hallucinatory Exhaustion.

Symptoms similar to the collapse type but not so severe, they are more easily controlled. Their degree of confusion varies. At times patient has no clouding of consciousness, and these temporary remissions lead to erroneous diagnosis and make the family and doctor hope for an early recovery, but in twelve or twenty-four hours they are back into their previous state. Their delusions and hallucinations are many and changeable. They are frequently of a sex, persecutionary, or of a legal nature. I have had patients to make wills, change them in a day or so, and in a day or so change them again, and after their recovery remember nothing about doing same. (They are easily influenced by relatives and friends who want to take advantage of their sickness.) This type usually lasts from one to three months and occasionally longer.

Diagnosis.—This condition is not always diagnosed, but there are a few conditions we must eliminate, and they are drugs (especially the barbiturates), delirium tremens, epilepsy, and catatonia, and it must be remembered that other mental disorders have their origin in infectious diseases, and that any psychosis besides its own characteristics may have additional symptoms which resemble those following infection.

Prognosis.—The prognosis depends upon the severity of the shock from whatever the cause may be, the resistance of the patient, and most important the kind of nursing the patient receives. The condition we see many of these patients in makes one feel there is no use trying to do anything, or they should be put in the state hospital, but I say nay. With special attention and especially proper nursing I have seen many of these patients get well as if by a miracle.

Mortality.—Some authorities put it as high as fifty per cent, but the writer believes their figures are high.

Treatment.—The treatment is very simple, but must be carried out.

First, a good nurse. A nurse should be with patient day and night. If relatives cannot afford graduate nurses, obtain practical ones or instruct members of the family as to what must be done.

Second, necessary fluids. Give same by mouth, rectum, hypodermoclysis, or intravenous. I have seen wonderful results, when apparently everything failed, from glucose intravenously and blood transfusions.

Third, diet. The majority of these patients have anorexia or they are too confused to cooperate in their feeding. They must be fed by spoon, medicine dropper, per rectum or tube. The latter should be guarded very carefully. If patient will eat, give him regular diet.

Fourth, drugs. I am a prohibitionist, but whiskey, two to four ounces daily, will help things along. I do not mean doctor, I mean patient.

When very restless and bromides will not control same, give three grains sodium amytal intravenously and when necessary repeat in six hours. Do not give large dose at one time to these patients.

Saline laxatives when a laxative is needed.

Give patient intramuscularly or intravenously iron cacodylate and sodium glycerophosphate. I prefer five cc. intravenously twice weekly.

Note.—Be sure you keep your eye on the urine. Examine same at least once every two weeks.

Fifth, massage. The patient should have as a minimum two general massages daily, not light rubbing, but force behind the rubbing.

CONCLUSION

First, this paper is to call our attention to and throw light on afebrile exhaustive psychosis following sickness, a condition that frequently is erroneously diagnosed.

Second, that nursing is the principal treatment, and all others secondary.

AFEBRILE EXHAUSTIVE PSYCHOSIS

CONDITION	SEX	AGE	TEMP.	BLOOD	P.	URINE ALBU.	DURA- TION	END RESULTS
1. Influenza	M	60	Normal	W. 7500 R. 4050	000	Neg.	2 mo.	Recovered
2. Influenza	F	21	Normal	W. 7800 R. 4140	000	Trace	6 mo.	Recovered
3. Influenza	M	65	99	W. 7600 R. 3800	000	Trace	3½ mo.	Recovered
4. Influenza	M	25	Normal	W. 8200 R. 4170	000	Neg.	2 mo.	Recovered
5. Influenza	F	36	Normal	W. 9100 R. 4270	000	Trace	5 mo.	Recovered
6. Influenza	M	27	99.8	W. 7800 R. 3760	000	Neg.	2 mo.	Recovered
7. Influenza	F	76	Sub-normal	W. 6500 R. 3940	000	Heavy Trace	3 mo.	Recovered
8. Influenza	F	71	Normal	W. 8300 R. 3740	000	Trace	2 mo.	Recovered
9. Influenza	M	4	99.4	W. 9200 R. 4180	000	Heavy Trace	2½ mo.	Recovered
10. Influenza	F	19	Sub-normal	W. 10300 R. 2930	000	Trace	5 days	Died
11. Pulmonary Tuberculosis	F	49	Sub-normal	W. 7400 R. 3480	000	Trace	4 mo.	Died
12. Pulmonary Tuberculosis	F	27	Sub-normal	W. 7860 R. 3180	000	Trace	3 mo.	Died
13. Pulmonary Tuberculosis	M	23	Normal	W. 7100 R. 2270	000	Neg.	2 mo.	Died
14. Tonsil I.	M	50	Normal	W. 11450 R. 4165	000	Trace	1½ mo.	Recovered
15. Puerperal	F	19	Normal	W. 7800 R. 4365	000	Neg.	2½ mo.	Recovered
16. Gall Bladder I.	F	67	Normal	W. 7687 R. 4448	000	Trace	1 mo.	Recovered
17. Typhoid	M	15	Normal	W. 8680 R. 4390	000	Trace	3 mo.	Recovered
18. Appendix I.	M	14	Sub-normal	W. 10340 R. 4230	000	Neg.	2 mo.	Recovered
19. Hysterectomy	F	27	Sub-normal	W. 7960 R. 4140	000	Neg.	1 mo.	Recovered
20. Appendectomy	F	35	Normal	W. 11830 R. 4390	000	Trace	2 mo.	Recovered
21. Smallpox	M	55	Normal	W. 11270 R. 4290	000	Heavy Trace	10 days	Died
22. Lobar Pneumonia	M	45	Sub-normal	W. 13120 R. 4240	000	Neg.	3 days	Died
23. Lobar Pneumonia	F	26	99	W. 10870 R. 4100	000	Trace	2 days	Recovered
24. Loss Blood, Throat Wound	F	19	Sub-normal	W. 6690 R. 3110	000	Neg.	5 days	Recovered
25. Scarlet Fever	F	12	Normal	W. 11870 R. 4132	000	++	7 days	Died
26. Erysipelas and Broncho-pneumonia	F	62	Sub-normal	W. 12260 R. 3953	000	Trace	14 days	Recovered

Sex—Female, 60%

Age—Youngest, 4 yrs.; Oldest, 76 yrs.

Blood { High White—34½%
Low Red—40%

Kidney D. 60%

Duration { Collapse—6½ D.
Del. Hul.—2 2-3 m.

Mortality—27%

Third, that the high mortality can be greatly reduced by active and persevering treatment.

DISCUSSION

DR. J. P. GILBERT (Nashville): Mr. President and Members of the Association: Dr. Hill has brought to our attention a very important subject which should be of interest to all members of the profession, the surgeon, the internist, the obstetrician, the pediatrician, the urologist. He has described one phase of the subject that usually belongs to a large group, the so-called infective exhaustive psychosis or the toxic infectious group or the delirious hallucinatory reaction types of Meyer. He describes them as disorders of behavior associated etiologically with brain tissue changes, especially edema, frequently occurring in conjunction with acute infections and in exhaustive states following operations, chronic cachexias, terminal cardiac and nephritic conditions, and drug intoxications.

Meyer definitely places them in his organic reaction group. Most authors and textbooks describe an exhaustive psychosis, but the majority of them admit that exhaustion plays a very small part in the production of mental symptoms, that it is the toxin that plays a more important part, but above all is the individual susceptibility of the patient that develops mental symptoms. It is usually described as the prefebrile, the febrile, and the afebrile states. The mental symptoms in the three stages are closely similar. In the main they are delusions of all kinds, hallucinations, both auditory and visual, disorientation as to time, place, and person, memory defects, restlessness, and sometimes stupor, depending upon the severity of the toxins or the condition that brought it about.

In the post-febrile stage, as described by the essayist, the psychosis is prone to be of a constitutional kind, such as the manic-depressive or dementia præcox reactions, depending upon, as described by the essayist, the individual make-up of the patient, whether or not he is emotionally unstable or has schizoid potentialities.

The collapse exhaustion or collapse delirium, as it is often called, is usually fatal in the severer forms and was formerly considered uniformly so and was described in the old terminology as acute delirious mania or acute mania.

All the symptoms described before are present to an exaggerated degree in these cases, with the addition of a high fever. The delirium or psychosis in those who are fortunate enough to survive is usually of relatively short duration. The confused delusio-hallucinatory or more often described as acute hallucinatory confusion, in spite of the descriptive terms, is of a milder form but of a longer duration.

The duration, together with its tendency to periods of remissions for varying times of twenty-four to forty-eight hours, does not remarkably

differentiate it from the other types of infective exhaustive psychoses.

I agree with Dr. Hill that the prognosis is favorable for recovery in possibly seventy-five per cent of the cases, but these individuals are very susceptible to recurrence of the disease; others will have some permanent changes such as memory defects, alterations of personality, inefficiency in business, defective judgment, and so forth, such as are often seen as the result of encephalitis, to which the collapse delirium is related.

I feel that all cases with fever, particularly those occurring in or following influenza, should have a spinal puncture if for prognosis alone.

Aged individuals are of course more susceptible to permanent changes and the attack nearly always hastens the development of senile dementia. Those developing dementia præcox types of psychoses carry the same prognosis as those developing the disease in another situation. Children are likely to suffer an arrest of mental development which may or may not be permanent.

Regardless of the theories as to the cause of the development of these psychoses occurring during or following illness, it cannot be stressed too much that it is fundamentally a measure or test of the stability of the nervous system, and that the type of reaction depends upon the constitutional make-up of the patient.

I wish to congratulate Dr. Hill on the uniformly good results obtained in the series of cases reported.

DR. W. S. FARMER (Nashville): Mr. President and Members: Being in this line of work myself, I always enjoy a paper on psychiatry. There are two general causes that predispose to mental disease. One is the hereditary make-up of the individual; another is an exciting cause. The hereditary make-up of the individual might be compared to a train of gunpowder, the exciting cause might be compared to a percussion cap, and when the two come together there is an explosion.

I have the same experience that Dr. Hill has. We see many cases come in with a history of having had influenza or some other acute infection, or even typhoid fever, or after the puerperal state, or possibly after surgical operations. Now we know that the majority of people that have influenza do not develop a psychosis. It is only those that are predisposed, and the disease possibly to an exhaustive nature may bring about the explosion or nervous breakdown.

Occasionally, the same thing follows a surgical operation and friends of the patient attribute the psychosis to the exciting cause when, as I said in the beginning, the two frequently have to come together.

Dr. Hill emphasized the importance of the personality make-up. That is true. The personality make-up of the individual is what counts in life, but we do know that many of these people have what Dr. Hill stated was a psychoid or paranoid

or schizoid make-up. For instance, I feel sure that you all have had a friend who would be optimistic, full of jokes, always in a good humor maybe for weeks and months, and then again you would see him and he would be sullen, he would not have anything to say, and you would wonder what you had said or done to him to hurt his feelings. You had not done anything to hurt the man's feelings; he was just of that manic-depressive make-up, sometimes elated, sometimes blue, and if he develops an infection he is more predisposed to this exhaustion psychosis than the ordinary man.

The same thing occurs in individuals of other types. Some men are of a suspicious, jealous na-

ture, and if they develop a psychosis, which many of them do, following infections, then you can assume the schizoid type.

I enjoyed the doctor's paper very much, and I want to say in closing that, while it is a little foreign to the subject, over fifty per cent of all your cases, whether you be a surgeon, a general practitioner, or what not, have a mental side to them, and frequently the mental side is the biggest side of all.

DR. JESSE C. HILL (closing): I have nothing to say other than that I want to thank Dr. Gilbert and Dr. Farmer for their very kind and instructive discussion.

PRACTICAL SUGGESTIONS CONCERNING THE ORTHOPTIC TREATMENT OF CONCOMITANT SQUINT*

LILLIAN H. TEPPER (By Invitation), Memphis Optical Dispensary Orthoptic Clinic, and
R. O. RYCHENER, A.B., M.D., Memphis

IN THE LAST FEW YEARS several orthoptic clinics have been established in different sections of the country and frequent reports of their activities have appeared in the medical journals. The results vary from what seems to be an exaggerated claim to doubtful conclusions as to the efficacy of orthoptic treatment of squint. Naturally the results depend greatly upon the conditions under which the training was carried out and such fluctuations of opinion are inevitable. However, if one has devoted enough time and interest, it will appear obvious that, although orthoptics is by no means a cureall, it does have its rightful place in the treatment of squint. Several conditions must be fulfilled if successful results are to be obtained. Proper selection of cases is a very important factor. Accurate apparatus which can be easily controlled is essential, and an attempt must be made to obtain the cooperation of the patient and to maintain his interest throughout the entire period of training. We have made every effort to make the work attractive to the children, and our experience has been that unless amusement and variety are introduced it is difficult to obtain the child's full cooperation.

The following material offered is an explanation of the technique used in the orthoptic clinic under the auspices of the Memphis Optical Dispensary. The clinic has been in existence a year and a half, and, although this is not sufficient time to make definite conclusions as to the value of orthoptics, we have been able to collect some interesting data and to obtain a good idea of the type of results to expect.

Every child who visits the clinic has been previously examined by an ophthalmologist, and the following information is supplied to the technician—history, previous treatment,

vision, refractive error, character of squint, angle of anomaly with and without glasses, motility, fixation, and presence of binocular vision. A more thorough investigation of the degree of binocular vision is made at the clinic.

There are no hard and fast rules as to which cases should be accepted for active treatment, but several factors must be considered. Age is important and, although treatment has proved successful way beyond the limit of seven years as determined by Worth, it is most effective in young children and adolescents. It is best to start treatment as early as possible, but from our experience we have found it unwise to commence active training with a young child who is uncooperative because of his youth. A certain amount of work can be accomplished with these children if approached tactfully, but usually it is insufficient to warrant the time and expense. It has the further disadvantage of leaving an undesirable impression on the child which proves to be a handicap when he is old enough to cooperate. We usually give such children a trial period before postponing treatment. However if amblyopia is present, occlusion is resorted to at a very early age, and refractive errors are corrected in any case where they are present. This having been done, the child will be in a position to derive the full benefit from orthoptics when he is old enough for active training. We find that children from six to twelve are the best subjects. In older patients the effort that they put forth sometimes overshadows the age factor.

The amount of vision in the amblyopic eye is our next consideration. Since orthoptics consists of binocular exercises, such form of training should be undertaken when the vision in the amblyopic eye is at least 20/50. We have attempted to train patients with less vision than that and, although they can obtain binocular vision, neverthe-

*Read before the Tennessee Academy of Ophthalmology and Otolaryngology, Memphis, April 13, 1936.

less the results are unsatisfactory. Our present method is to recommend a preorthoptic period of occlusion until the vision is more nearly equal in both eyes. During this period the patient is kept under observation and the vision in both eyes examined every two weeks.

The degree of the angle of squint is another factor which governs the prognosis of the case. Squints of fifteen to twenty degrees can be overcome by exercises without very much difficulty and sometimes respond better than smaller deviations. In squints of larger degrees it is wise to attempt training and to continue as long as improvement is noticed. They may not be cured entirely, but they will be better prepared to recover binocular balance after surgery. Exercises should be started again as soon as possible after the operation and continued until orthophoria is obtained. Alternating squints are not as favorable as monolateral, but we have not had the proper apparatus until recently and have thus been unable to come to any fair conclusion.

TREATMENT

1. *Home Training.*—For many of our patients it is almost impossible to come to an office or clinic for regular treatments. In these cases home treatments, although seldom as beneficial as supervised training, are resorted to rather than to leave the patient untreated. If simple, explicit directions are given, much can be accomplished, especially in occasional squints and when the deviation is comparatively small. Since a great number of our patients fall into this category, it has been necessary to plan a simple and intelligible routine for home exercises. The patient or parent is given a brief explanation of what we are trying to obtain, and often we find it helpful to refer them to some accurate article on the subject written for the laymen, such as usually appear in "Hygeia."

A. Binocular exercises.

(a) *Stereoscope.* There are several instruments on the market recommended for home use, but it has been essential to choose the least expensive one that will give a good result, and we have found that the ordinary hand stereoscope suits our purpose. Several

sets of cards are available, and the choice depends on the age of the child. The Wells charts are used for adults and the Kroll series for children. There are many other sets that can be substituted — Sattler, Guibor, and Dvorine. Verbal explanations are given regarding the proper use of the stereoscope and special emphasis made on those points which bear upon the specific type of disorder the patient has. In addition printed general directions are given and uniform correspondence blanks are supplied to help guide the work.

Whenever prisms are necessary, they are rented out for a small fee, but only when we feel that it is in the hands of an intelligent person upon whom we can depend to carry out our instructions. Many of the patients build themselves a box in which to rest the stereoscope, and, even though it may be crude, they can adapt it for drawing and several of the devices that are described in connection with the use of the cheiroscope.

(b) *Recession exercises.* The equipment needed for this exercise is a small electric bulb and a red filter. The patient places the red filter over the suppressing eye and notes the number of lights seen. If two lights are seen, one red and one white, the patient is directed to move towards the lights until they are fused and then away from the one pinkish light, attempting to hold it single. If a searchlight is used, variety can be added to this exercise by fastening a transparent picture over the light. Prisms are used with this exercise to increase the effort put forth by the patient.

(c) *Drawing exercises.* Another inexpensive setup which is used for home training consists of a set of pictures whose outlines are partly red and partly blue. They are retraced while a red and blue filter is held over the eyes. If both eyes are being used, the entire picture is seen simultaneously and can be drawn completely; but if one eye is suppressed, then a partial picture will be seen and drawn. The filters may be made of cellophane or glass. The Color-type Company of Chicago puts out a red and blue filter which we use that can be purchased for a few pennies. Most children trace their own pictures with red and blue crayons and perform this while occlud-

ing the better eye and then retrace it while wearing the filter.

If the exercises described above are faithfully carried out, one can expect some improvement. However, they are not to be recommended where rapid alternation and false projection exist. These should be ruled out before prescribing any home treatment. The patient returns every three or four months for a checkup and further advice, and, if possible, visits the office more often.

B. Monocular exercises.

It has already been mentioned that in monolateral squints where the vision in the amblyopic eye is less than 20/50 a period of occlusion should precede active training. The occlusion is continued even after training has been started and it may be either total or partial occlusion. We are confronted constantly with the objections the patients have to occlusion and have to use different forms for each patient, but we have found that if they are encouraged to do something interesting and amusing they will not mind it as much. Maddox has also laid great emphasis on the value of hand and eye cooperation in training. We keep several toys on hand to show the parents what to buy, although most of the toys found in the five-and-ten-cent stores will answer the purpose. We have chosen those that we think are better suited for overcoming amblyopia. For very young children the following are recommended: kaleidoscopes, colored pegs and board, paper weaving, blocks, mosaic sets, picture books, etc. For older children there is an even wider choice from the following: basketry, loom weaving, anagrams, painting, sewing cards, dotto mystery, lotto, bingo, dominoes, parquetry, monocular microscopes, graphoscope, clay modeling, sewing, and crocheting. Reading is very valuable, but a great many patients cannot see the average print. In our clinic we have purchased several books that are used in sight-saving classes. The print is large, clear, and well spaced and, although more expensive than ordinary books, they are made easily available by charging a small rental fee. There are several titles to interest boys and girls of all ages. They are published by the Clear

Type Publishing Company, 36 Elston Road, Upper Montclair, N. J.

II. *Office Training.*—Since the technique varies with the instruments available for orthoptics and the use of each instrument varies still further with each case, it seems the wisest plan to outline the office procedures by describing the methods employed with each instrument.

A. The instruments used at our clinic are the synoptophore, kinetic stereoscope, cheiroscope, stereo-orthopter, phorometer, stereoscope, and amblyoscope. At least one instrument which enables the trainer to have an unimpeded view of the eyes is necessary. There are several on the market—the orthoptoscope, synoptoscope, and the synoptophore. They are all made in England, but we have been using the synoptophore and have found it very satisfactory.

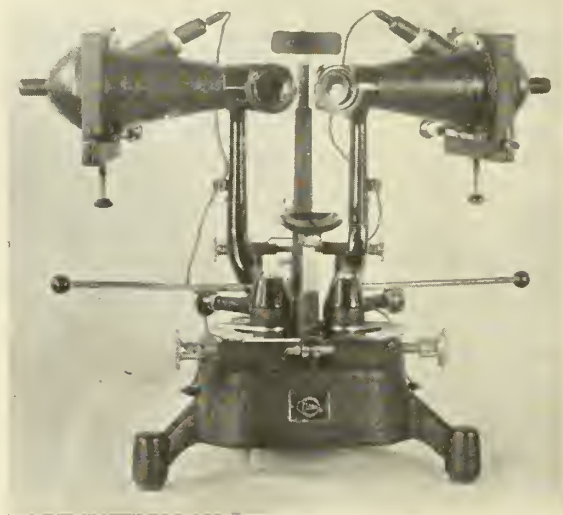


Fig. 1. The synoptophore.

With the synoptophore (Fig. 1), the technician can see the corneal reflex without any difficulty and does not have to depend entirely on the patient's subjective answers. The instrument is really a glorified amblyoscope mounted on a substantial stand. It has scales for measuring horizontal, vertical, and cyclic deviations in prism diopters and degrees. There is an adjustment for the pupillary distance and the illumination can be varied in each eye by means of small rheostats. The movements can be controlled by the operator and a flickering device enables one to detect any

shifting of the eyes. It also has some excellent slides that appeal to the children and which can be used to develop all grades of fusion. Additional slides can be made and the "funnies" supply amusing pictures.

(a) Monolateral squints. The illumination is made greater on the deviating or suppressing eye. The patient is asked to set the apparatus at the point where fusion takes place and the subjective reading is noted. If both control marks are seen, if the angle of fusion is in the approximate neighborhood of the angle of deviation, and if the eyes do not shift at the flickering of the lights, then one can assume that true fusion exists. If on the other hand only one control mark is seen, suppression has occurred; if the eyes shift, then false projection must be considered. False projection is one of the difficulties encountered in orthoptic training and in most cases cannot be easily detected without the aid of an instrument which allows us to see the corneal reflex. Before fusion training is attempted this false projection must be

broken down. It is common among squinters. The technique used to overcome false projection is to set the apparatus so that the corneal reflexes are nearly centered and no shifting occurs. At this objective setting the patient may not be able to see the objects fused, but if the tubes are oscillated through this true angle, then it will be found that the images will gradually approach each other until fused. Another technique used is "retinal massage." After both lights are adjusted so that they fall on the macula, short rapid movements are made to stimulate that area to take part in binocular vision. This process may be somewhat tedious, but we have found it effective in overcoming false projection. After fusion can be obtained at the true angle, amplitude must be developed. A screw adjustment will slowly move the tubes so that the prism power increases or decreases, while the patient makes an effort to maintain fusion. For a convergent squint they are moved to give a base in effect and for

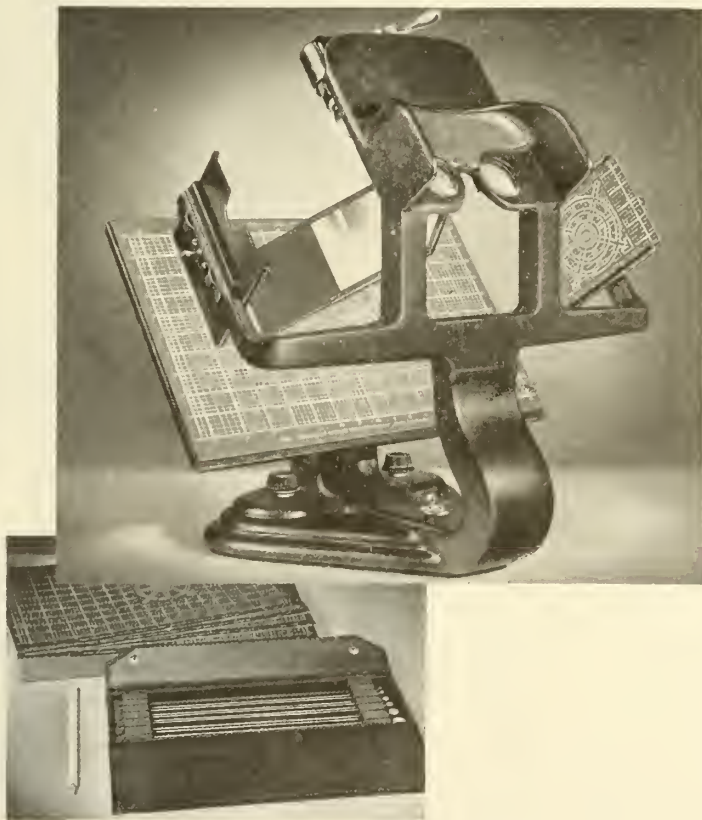


Fig. 2. The cheiroscope.

a divergent base out. Convergence and divergence power can thus be developed.

(b) In alternating squints the same technique is used, but special emphasis made upon the shifting of the eyes. Frequently this alternation is so rapid that simultaneous binocular vision is simulated. False projection is very common among alternating squints and tends to complicate training procedure. It is usually more difficult to obtain fusion in these cases, but it can be done with perseverance.

After having determined that the patient is using his eyes properly, by observing them on the synoptophore, other instruments may be used successfully. One great advantage of having several instruments is to add variety to the routine, but very frequently it is found that one particular type of machine is most valuable at a certain stage of the training. Drawing on the cheiroscope is very helpful in overcoming amblyopia and coordinates the eye, brain, and hand. We have found the cheiroscope very adaptable to many of the ordinary games that children enjoy. (Fig. 2.)

(a) Drawing.—We have graded our pictures that are traced on the cheiroscope, and as the patient advances he is given more difficult ones to copy. The pictures are colored with bright crayons. If the child is very young and cannot manipulate a pencil, or if the patient has a fixed habit of suppression, a picture of a fly or a train is rotated by means of a rotating disc supplied with the apparatus. The patient is instructed to follow it, making a pencil mark wherever he sees it. This same rotating disc can also be used to build up designs. An initial figure such as a triangle or a petal is placed on the disc in such a manner that by rotation of the disc the figure can be repeatedly copied and a design created.



(b) Dotto.—One can add interest to the exercise by using the pictures which are formed by connecting numbers. They must be drawn backwards in order that they

appear right side up after reflection. The child is always anxious to see what picture will evolve and will concentrate with little coaxing.

(c) Clay work.—A plaque of clay, preferably red, is placed on the drawing board in place of paper. The child traces the picture in the clay with an orangewood stick and can smooth out the lines and draw new ones. This is a great favorite with the children and is usually given as a reward for good behavior.

(d) Lotto.—A lotto card is placed in the cardholder and the corresponding numbers placed on the squares. This can be used only with a flat cheiroscope.

(e) Paper dolls.—Girls will enjoy tracing clothes for paper dolls, and because they can take them home to play with they will try to trace them accurately.

Throughout these exercises emphasis is laid upon the fact that all these pictures must be traced and not copied, and the child



Fig. 3. The kinetic stereoscope.

must be watched to see if that is carried out. Many children who cannot maintain binocular vision but can draw well will copy the pictures and one must be aware of such patients.

The kinetic stereoscope (Fig. 3) provides an additional advantage of exercising fusion in all fields of the gaze. The rotary movement improves muscular tonicity. The prism power can be varied by decentering the spheres, and the radius of the circle can be changed to increase the diameter of the excursion made by the eyes. The pictures used with this instrument illustrate all grades of fusion. The apparatus is very good as a finishing-up instrument.

The stereoscope is used with several different series of stereoscopic charts, viz., Wells, Sattler, Kroll, Dvorine, and Keystone. We usually start our patients with a simple set and advance them to those used to develop depth perception, for which purpose we prefer the Keystone cards. For amplitude base-in prisms are added for convergent squints and base-out for divergent. Usually, if there is time, the technician discusses the picture which the child is looking at, and it will be noticed that the effect of depth is increased during the conversation. In order to make it easier for the child to explain in his terms whether he appreciates depth perception or not, we have pictures that fold up flat against a sheet of paper or can be unfolded to stand out in relief. Many greeting cards have such an arrangement and children's books have "pop-out" pictures.

We have also made several of our own charts. Some of the more amusing ones as well as beneficial are the "Popeye" card and the maze. On one side of the card, a picture of a screen is placed, and on the other a strip of "Popeye" comic pictures, which after fusing in the screen are pulled through the slit and simulate moving pictures. The moving part is placed before the deviating eye. The usual maze tricks found in the Sunday papers can also be converted into charts to be used with the stereoscope. On the side of the affected eye a maze is drawn, on the other side a mouse. The patient fuses the picture until the mouse is at the

starting point and then follows the complicated lines until he gets into the trap.

During the period of active training the patient visits the clinic three times a week, and a treatment usually lasts from one-half hour to three-quarters of an hour.

RESULTS

Although the clinic has been open for one year and a half, we have not been in possession of the synoptophore until the last six months. We have encountered a great deal of difficulty with false projection and could not do much about it until we received our synoptophore. Several of the patients dropped out on account of change of residence and lack of interest. Therefore we cannot cite as many complete case histories as we should like to, but the following have been chosen because we have found them to be typical of the results obtained in the type of squint they represent.

Case 1. E. A., a girl ten years old, was brought to the Memphis Eye, Ear, Nose, and Throat Hospital at the age of seven, 1932. The mother reported that her eyes turned in since the child was three, after an attack of measles. Examination showed a convergent squint of twenty-five degrees, with either eye fixing, but preference shown for the left eye. Child was refracted and returned nine months later for examination. Eyes had improved with glasses but the right eye still converged fifteen degrees. In June, 1934, the child was referred for orthoptic training. At that time she had a right convergent squint of fifteen degrees. She wore a + 2.00 sph. + .75 cyl. axis 180 O.D. and + 1.75 + .50 cyl. axis 180 O.S. Corrected vision was 20/40-3 O.D. and 20/25 O.S. Before treatment she had poor fusion ability with no amplitude but improved very rapidly. In October, 1934, eyes were parallel with and without glasses, and treatment was continued to develop amplitude. At this time illness interrupted training, but it was interesting to note that there was no recurrence of squint. On March 26, 1935, patient was dismissed with the following record: V.O.D. 20/22-3, V.O.S. 20/20, stereopsis, orthophoria with Maddox rod with and without correction. Her adductions were fifty-six prism diop-

ters and abductions twenty prism diopters. She has returned twice since the time of her dismissal, and the results have been maintained.

Case 2. M.E., a girl age twelve, was referred for orthoptic training September, 1934. At that time the left eye diverged about twelve degrees, although the patient could at times control her eyes and make them parallel. No binocular vision could be obtained and convergence was poor. She wore a + .50 cyl. axis 100 O.D. and a —.25 sph. —1.25 cyl. axis 90 O.S. Her corrected vision for the left eye was 20/40-2 and 20/25 for the right eye. When treatment was started, the patient showed signs of false projection. The right eye was occluded and false projection broken down. Convergence exercises were given for distance and near. Fusion amplitude was developed and stereopsis obtained, but with a good deal of difficulty. Patient was dismissed after seven months' treatment. Eyes are parallel for distance and near, convergence excellent, stereopsis present, and a fairly good amplitude of fusion. Vision in the left eye is 20/30 + 2. Patient still does convergence exercises at home.

Case 3. A.B., a boy age seven, was referred for orthoptic training April, 1935. Eyes were straight with glasses but converged eight degrees without them. Correction is O.D. + 3.00 sph. + 1.00 cyl. axis 60 and O.S. + 3.25 sph. + 1.00 cyl. axis 90. His corrected vision was 20/20 O.D. J1 and 20/50 J12 O.S. After six weeks of treatment and occlusion of the right eye, vision was improved in the left eye to 20/30 + 2 J2. He has stereopsis and eyes are parallel with and without glasses. Illness in family prevents child from coming, but he returns for checkups once a month and improvement is maintained.

CONCLUSIONS

1. Orthoptic training, if carried out under suitable conditions, plays an important part in the treatment of squint.

2. The work must be made attractive to the patients.

3. Occlusion and occupation during occlusion are important procedures for successful training.

4. False projection is a handicap in fusion training but can be overcome in most cases if the proper equipment is available.

5. Our results so far have proven that cases which respond most favorably to orthoptic treatment are monolateral squints where the vision in the deviating eye is at least 20/50 and the angle of squint less than twenty degrees.

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DISCUSSION

DR. H. C. SMITH (Nashville): Miss Tepper's paper has been of considerable interest to me, for it is my opinion that few accomplishments in ophthalmology surpass that of the correction of squint with restoration of binocular visual function. Simple abolition of a cosmetic defect, although entirely desirable, is but a part of the end which should be sought by the surgeon who proposes to treat squint.

While orthoptics, painstakingly employed, will correct ocular deviations of suitable type, it is not always possible to obtain a cure by employing it alone. Patients treated by surgery become subjects for orthoptic training, for fusion, breadth of fusion, and depth perception must be taught eyes newly aligned after years of deviation with suppression of the images received by one eye. Unfortunately, there is not time in the routine of an office day for the surgeon himself to direct orthoptic exercises for his squinting patients. Neither is it possible, except occasionally, to employ a technician trained to supervise this work in the office. The majority of us are forced to rely upon the intelligence of mothers in carrying out our instructions regarding occlusion and exercise with stereoscope or amblyoscope at home. Memphis oculists are fortunate in having Miss Tepper and the clinic at hand to provide what their cases require. Certainly no one could question the advantage of the clinic over home training, supplemented by periodic visits to the oculist.

Miss Tepper's statement regarding the types of squint most amenable to orthoptic exercises is quite correct. One cannot always obtain simultaneous binocular perception of images with the amblyoscope when the angle of squint is more than twenty degrees. Intelligent children between the ages of six and twelve offer the best prospects for the development of fusion and recovery of good vision in the amblyopic eye; however, I have seen children much under six do good work with orthoptic devices. On the other hand, I have seen a student at twenty-two work diligently enough to improve the vision in an amblyopic eye to 20/100, and all but abolish the large central scotoma which such eyes possess. Of course, the squint in this case had been corrected by surgery.

I was particularly interested in Miss Tepper's statement that alternating squint might be amenable to treatment by orthoptic exercise. It had been my belief that patients with this type of squint possessed no fusion faculty, and would, therefore, not respond to fusion training. Low degrees of monocular divergence are probably most easily conquered, since convergence is more easily stimulated than divergence.

I am sure that Maddox is responsible for much that has been developed in the treatment of muscle deviations by orthoptics. His daughter, Miss Helen, has operated private offices and at the same time supervised an orthoptic clinic at Royal Westminster Ophthalmic Hospital in London for several years. The work calls for ingenuity in creating new cards and charts for the various instruments and devising new plans for engaging interest in what may easily become an irksome routine for children. We observe that the synoptophore and other instruments are all of British manufacture.

Aside from the treatment of actual squint, with which Miss Tepper's paper concerns itself, orthoptic exercise is a valuable adjunct in the treatment of patients with lateral heterophoria. Unless such

facilities as are offered by a clinic are available, we must rely upon our ability to stimulate parents and patients to faithful home training with prisms, stereoscope, or amblyoscope, and our results are not infrequently disappointing.

To maintain a service such as is being offered here, it would be necessary to enlist the support of a number of ophthalmologists. In smaller cities, I doubt that work, in sufficient volume to employ a technician for full time, would be found. In our city we are discussing plans for including orthoptics in the training of a technician for routine work in the eye clinic at Vanderbilt Hospital. We cannot take the advantages of orthoptic training lightly. We could wish that all of us could practice in a community where maintenance of a clinic were possible.

DR. PHIL M. LEWIS (Memphis): I believe we are all forced to admit that in certain cases there is a definite value in orthoptic training. That it requires considerable expensive apparatus, a great deal of time, and infinite patience is unfortunate but true. Few if any of us have either the time or the patience necessary to do this work. A trained technician is therefore essential. The remuneration received from this branch of ophthalmology is apt to be too meager to justify the

initial cost of equipment and the necessary running expenses. Furthermore, the developments in this field have been and still are so rapid that the apparatus in use today is apt to be obsolete by next year. We are very fortunate in Memphis in having the well-equipped orthoptic department of the Memphis Optical Dispensary available for our patients at a very reasonable cost. It seems to me that some arrangement of this sort is the best solution of the problem.

As the essayist brought out, the cases have to be rather carefully selected. Patients with a high degree of amblyopia are not apt to be benefited. Vision of at least 20/70 should be present in the squinting eye. If vision is less than this, prolonged occlusion of the better eye should be tried first, to increase visual acuity. Very young children, under six, are usually too uncooperative, and those past ten years are apt to yield poor results. Occasionally children of thirteen or fourteen and rarely older ones may be improved.

Orthoptic training is often of value in other conditions besides convergent strabismus, namely, divergence excess and convergence insufficiency. It is quite probable that this work is still in its infancy and that developments in the next few years will yield results which are far better than those we obtain today.

"CONGENITAL ATRESIA OF THE VAGINA"*

W. B. BARTON, M.D., Briceville

REPORT OF CASE

The word atresia as explained by modern medical dictionary gives as definition: imperforation, or absence of, or closure of a normal opening.

IN REVIEW of all available literature at the disposal of the American Medical Association library, I have found eight cases of complete congenital atresia of the vagina reported, and one borderline case.

These reported cases date back to 1926, some from the *British Journal* and several from the *Indian Medical Gazette*. It is accepted fact that there are more frequent occurrences of these cases of congenital atresia in general practice even in the United States, but are unreported to current literature. However the incidence of occurrence of this condition is more frequent in population of the Eastern nations, particularly India.

A review of these eight cases in detail show that the average age of the girl, when the physician was consulted, was sixteen and one-half years, the youngest being fourteen and the oldest twenty.

The chief complaint with which many of these eight cases consulted their respective physicians was with pain, acute pain in lower abdomen. However, two of them also complained of tumor in lower abdomen, two severe kidney and bladder pains, and three complete urinary retention.

It is easy to see from a mechanical viewpoint how one-half gallon or more of liquid impounded in the vagina can be compressed so that the urethra is completely displaced, or pressed against the pubis by direct pressure so as to produce complete retention, and urinary pain.

It is equally easy to understand how this same volume of retained blood in the vagina and uterus will produce labor pains after the distension of the body of the uterus to its

limit especially in a girl in her early teens.

In three of these cases reported, the uterus was seen and felt through the abdominal wall, as rounded mass or tumor, pressure on which produced pain in vaginal region, and in bladder when retention was present. The mass was described not unlike a six-month pregnancy, but without the solid consistency of a pregnancy. Three of these cases were found in one family, ages 20, 16, and 14, as reported by Dr. D. L. McElroy in *Royal Society Journal of Medicine*, March, 1930. The first two cases being found by pain in abdomen and third, before the symptoms became bad, came under suspicion from similar condition as her sisters suffered.

In all of these cases menstruation had been evidently occurring regularly from six months to four years or more, judging from the symptoms alone. One case was of five years' duration and age twenty. The borderline case I mentioned was twenty-six years old, and had not menstruated more than a drop or two each month, and her marriage and inability to live with her husband under normal relations brought her condition to light, and there existed several quarts of retained menses in the vagina. This case evidently had been of almost ten years' duration.

It is interesting to note the variation in first diagnosis that these cases sometimes received. Dr. A. H. Mouridan in *Medical Journal and Record* reports case he received at hospital with the diagnosis of acute retention and poliomyelitis. Second examination showed acute retention with pain so severe in lower abdomen that it produced mental symptoms similar to those of meningitis. This case had small mass in lower abdomen also. However, following incising of the hymen and drainage instituted, she was well enough in two days to return home.

With this summary of those cases in the library of the A. M. A. I have attempted

*Read before the Anderson County Medical Society.

to bring to your attention the importance of eliminating this condition in arriving at a diagnosis concerning retention or pain or both in young girls who have not menstruated.

Personally I have received and seen in nine and one-half years practice only one definite atresia of the vagina, which was congenital and complete.

On August fourth at three p.m. I was called to see young girl, age sixteen, who was in agony of acute pain of two days' duration.

On arrival at bedside I found young, well-developed miss in the throes of acute pain and crying.

Family were reluctant to give much information and I was unable to get much from the girl.

Under this condition I thought perhaps she was pregnant and shame of the parents prevented them being frank.

A general inspection of face, throat, neck, and chest all showed normal girl of her age. Breast well developed. Pulse and temperature 100 with respiration twenty per minute. Upper abdomen normal except for rigid recti muscles. This rigidity suggested an appendix. There was definite rounded mass in lower abdomen, mass dull on percussion, four inches in diameter, easily palpable, soft on hard pressure but consistent in shape. Pressure produced indirect pain in lower abdomen.

Further inquiry in the history, I learned from the girl that she never menstruated that she knew of, and that she could not micturate, just dribble, and always she felt like she wanted to. Then the mother told me of having taken her to numerous physicians for that kidney trouble and none had relieved her. She mentioned several prominent physicians, and all who prescribed diuretics I suppose because she said her urinary pain became worse after taking their medicine for a while.

At this point it became evident that her chief complaint was complete retention and severe cramping.

I catheterized her and got pint and half of bloody urine which ran out the catheter slow.

However the tumor in the abdomen got no smaller.

A vaginal examination was then in order. On attempt to make one I found the passage blocked entirely, and I for first time in my practice of medicine was unable to get my examining finger in any opening in vulva. Somewhat startling but true to me.

An inspection was made on the girl after some argument with her and her mother. This revealed that there protruded from the vagina a soft short mass about one-inch long. There were no openings at all and urinary meatus was hardly visible. There was not any labia minora.

After informing the family that I suspected the girl had been menstruating and nature had never opened her passage, and it was necessary to operate on her to make a natural and necessary opening, I finally secured permission.

Instruments were sterilized consisting of haemostats and knife I had in grip. Parts iodined and approximate location of vaginal opening gasped with haemostat, and incision begun under local. I found this membrane as thick as finger and very tough.

At the second of complete incision there gushed from the canal into dishpan I had near two and one-half quarts of coffee-colored fluid, which was thick and had handful of solid coffee-ground-like particles in it. There also came about one and one-half pints of urine.

The tumor completely disappeared, and the girl said, "Gee, I feel good now."

Patient was cleaned and put to bed. Sterile bichloride douche ordered for next morning.

Next day was comfortable for her, voiding normally and with no urinary pain. I told her parents to bring her into office in two weeks for checkup.

In meantime I went to Florida on vacation and it was five weeks later before I saw her, September 13. Examination showed her vagina had closed again and almost obliterated my incision. She was reopened and dilated with rectal speculum. There was about a teacup of blood in canal at this time, she having menstruated since my last visit. She was drained, mopped out with argyrol and packed with argyrol gauze.

Week later showed tendency to heal again and again I opened and dilated the vaginal orifice, repacked the vagina. A bichloride douche was ordered daily to correct a mild infection she had developed.

For three weeks I had to reopen and pack her weekly.

On October 4, it seemed she would not heal up again and on her last visit October 20, the orifice was open and patent, admitted small vaginal speculum easily, no discharge and infection cleared up. She advised me she was feeling good and for first time going around as other girls do.

From the foregoing it is evident that in any young girl who is in menstruating age, and never menstruated, with any pain in abdomen or urinary complaint, one must suspect or eliminate atresia of vagina. Many of these cases I think have complete

atresia but spontaneous rupture and a temporary flooding spell results with no other physical signs. These cases we hear of quite often. I remember one newly married girl I was called to see one night in 1930. Her first wedlock night. Her chief complaint was flow of about one and one-half quarts of blood. Flooding. I could not find anything in examination to prove she was ill, and by watchful waiting and packing her once, I learned that this may have been what she had, namely, rupture of hymen and freeing of impounded menses.

I reported this case because of its intense interest to me, and an admitted fact that this condition may confront any practitioner, complicating a simple diagnosis, and which he can remedy easily, and bring immense relief to patient and her parents if he is watchful.

EDEMA*

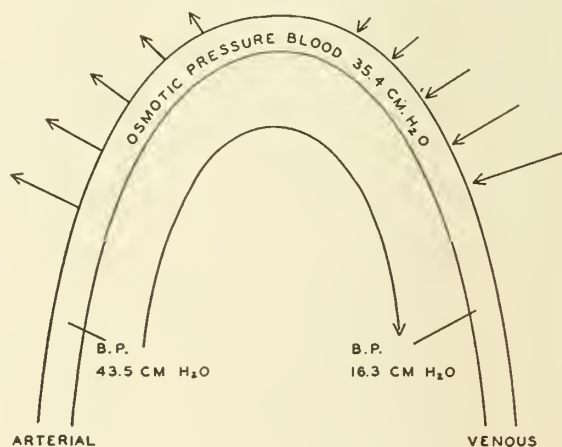
JOHN B. YOUNG, M.D.,** Nashville

UNTIL QUITE RECENTLY our ideas of the mechanism of edema have been very confused. This was rather strange because the concept which is generally accepted, at present, rests upon observations and deductions made by Starling as long ago at 1896.¹ The confusion and disagreement which existed were the result, I believe, of a failure to appreciate the importance of certain fundamental factors and a mistaken emphasis placed on various secondary factors by some investigators. At the present time the generally accepted theory of the mechanism of edema, based on Starling's hypothesis, not only offers a satisfactory explanation of edema theoretically, but provides a practical working basis for purposes of diagnosis and treatment. I shall first explain the mechanism as simple as possible and from that proceed to a practical consideration of classification and treatment.

In considering edema it is important to remember that it differs from the normal state only quantitatively. Fluid is always present in the tissues (tissue spaces), but edema is present when there is *more* fluid than normally. Clinically, the presence of edema is usually established by the pitting of the tissues on pressure, but a considerable excess of fluid may be present before pitting occurs. This excess may amount to several pounds or an increase of ten per cent in leg volume. Such states may be defined as latent edema or pre-edema and are recognized in various ways as by a rapid gain in weight or by the diuresis resulting from treatment.

Because edema is merely an excess of fluid in the tissues an explanation of its occurrence is to be found in a consideration of the mechanism which normally controls the exchange of fluid between the blood and the tissues, or tissue spaces. This mechanism

is as follows: blood flows through the capillaries under an average head of pressure of 43.52 centimeters of water in the arteriolar end. This pressure falls to an average of 16.3 centimeters of water in the venous end.² The capillary walls are freely permeable to water (like a sieve) so it may immediately be asked why all the water in the blood does not leave the capillaries almost at once. The osmotic pressure of salts, sugar, and such substances as urea cannot be counted on to hold the fluid in the vessels since the capillary wall is freely permeable to them also, and as they exist in equal concentration on each side of the wall their osmotic pressures outside and inside the capillary balance and cancel each other. There are, however, certain substances which cannot pass through the capillary wall under normal circumstances. Thus, they exert an osmotic pressure within the vessels which tends to hold water in. These substances are the serum proteins. The average osmotic force exerted by these proteins is 35.4 centimeters of water. As stated above, the blood pressure in the arterial end of the capillaries is 43.5 centimeters of water, or significantly greater than the colloid osmotic pressure. Fluid, therefore, will pass out of the capillary into the tissues at the arterial end. At the venous end of the capillary, however, the blood pressure has fallen to 16.3 centimeters of water, a value considerably less



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than that of the colloid osmotic pressure, so that fluid will be absorbed back into the capillary at the venous end. Furthermore, the loss of fluid at the arterial end increases the concentration of serum proteins and raises the osmotic pressure which also aids resorption (Fig. I). Under resting conditions as, for example, during quiet recumbency, the tendency to resorption is probably greater than the tendency to filtration, and fluid is slowly withdrawn from the tissue spaces. During activity, as in exercise or glandular secretion, arteries, arterioles, and capillaries dilate, intracapillary pressure is increased, and filtration exceeds absorption so that fluid accumulates in the tissue spaces to be finally drawn off by the lymphatics, which eventually return it to the blood.

This is the fundamental mechanism concerned with the exchange of fluid between the blood and tissues, and alterations in this mechanism, if of sufficient severity, may cause edema. Consideration will show, then, four primary alterations which may cause edema, or, in other words, four primary types of edema. These are (Chart 1) (1) elevated capillary pressure, (2) lowered osmotic pressure, (3) damage to the capillary wall, which makes it permeable to protein, and (4) lymphatic block, which prevents removal of fluid from the tissue spaces (especially in states of activity).

There are, however, a number of secondary factors which, while not producing edema by themselves under usual circumstances, may determine the occurrence or non-occurrence of edema under certain conditions or modify the degree of edema produced by a disturbance in the primary mechanism. These secondary factors are (1) tissue pressure, (2) posture, (3) salt and water intake, (4) heat, and (5) nervous influences.

Tissue Pressure.—When fluid accumulates in the tissue spaces it forces the tissues apart and thus causes an increased pressure in the tissues which tends to prevent the further accumulation of fluid. This is a more important factor than has been appreciated and under certain conditions, as in the erect posture, tissue pressure may be *relatively* a greater force in preventing

an abnormal accumulation of fluid in the legs than the increasing colloid osmotic pressure of the blood.³ On the other hand, the loose tissues about the eye, or the loose tissues of legs previously stretched by edema, allow fluid to accumulate more easily than normally and thus may permit edema to occur when otherwise it would not.

Posture.—Posture influences the exchange of fluid.³ For example, the dependent position of the legs in standing increases the venous pressure in them and hence the capillary pressure. This increases the forces of filtration and favors the formation of edema or increases it when present. On the other hand, relieving this increased capillary pressure by lying down may lessen edema in the legs or abolish it if the abnormal change in capillary pressure or colloid osmotic pressure is not too great.

Salt and Water Intake.—Water is necessary for the formation of edema. When water is retained in the body, salt is of necessity retained too, to prevent dilution of the body fluids. On the other hand, when salt is taken, fluid is retained to dissolve and hold it. Thus an increase in salt and water intake, or either alone, tends to favor the formation of edema and in the presence of any of the primary causes of edema may be a determining factor in the presence or amount of swelling. Conversely, the restriction of both or either tends to prevent or lessen edema when the primary factors tend to produce it. It may be noted, however, that when severe changes in the primary forces exist the effect of salt and water restriction is relatively ineffective.

Temperature.—Increases in environmental temperature by dilating the arterioles and capillaries increase the capillary pressure, or filtering pressure, and favor filtration and the development or increase of edema.

Disturbances in innervation, as in an hemiplegia, may affect the capillaries, producing a dilatation, for example, thus favoring filtration and edema; or the paralysis, by reducing muscular activity which greatly aids lymph drainage, may in that way increase the accumulation of fluid in the tissues.

I shall now correlate these primary and

secondary factors with the various disease states which are accompanied by edema, thus providing a clinical classification of the edemas (Chart 2).

The edemas which are caused by an increase in capillary pressure are found in heart disease (congestive failure), and in venous obstruction of various types including thrombophlebitis. Edemas due to a lowering of the colloid osmotic pressure occur in nephrosis or chronic nephritis because of a loss of blood proteins (albumin) through the kidneys. They also occur in malnutrition because the patient either does not eat enough protein, for one reason or another, or because he is unable to absorb what he does eat. The edemas of certain diseases such as cirrhosis of the liver, in which there may be some defect in the formation of blood proteins, are included in this group. Edema from damage to the capillary wall, with resulting loss of serum proteins into the tissues, is seen in inflammations, with burns and freezing, in allergic states such as angioneurotic edema, and in certain poisonings. In this group may also be included the edema of acute nephritis, in which there appears to be a widespread capillary damage. Lastly, edema due to lymphatic obstruction is seen in the various types of elephantiasis and related conditions.

From the clinical point of view, the influence of the various secondary factors needs little discussion. Thus, in heart failure, the erect posture may increase the edema in the dependent legs by causing a still greater rise in capillary pressure. The influence of various postures in bed patients is well known. An increased intake of fluid or salt may increase the edema in nephritis or nephrosis, in cardiac failure or in malnutrition, and a decreased intake of these substances may lessen the edema or abolish it. Legs stretched by previous edema in a nephritic or cardiac patient become edematous again more readily and the loose periorbital tissues are often the first site of an edema in acute nephritis. Many patients with cardiac disease notice an increase of edema in warm weather, and endemic nutritional edema is much more common in the summer.

Although the edemas may be classified into these four main types, considerable confusion will occur unless one realizes that in practice mixed types of edema are common. Many patients with heart disease are improperly nourished, for one reason or another, and hence an edema due to a lowered osmotic pressure (decrease in serum protein), a malnutrition edema, may complicate an edema due to increased venous pressure. Capillary damage due to poor circulation in heart disease perhaps may permit the loss of protein through the capillary wall, while the increased venous pressure may hinder the drainage of lymph (fluid) into the veins. In nephritis and nephrosis the tendency to restrict meat may result in a deficient intake of protein, hence a lowering of the blood protein beyond that caused by a loss of albumin in the urine. Patients with nephritis may also develop heart failure and thus add a cardiac edema, an edema due to increased capillary or venous pressure, to an edema primarily due to lowered serum proteins. There is also some reason to suspect that any long-continued edema may result in changes in the lymphatics which interfere with lymph drainage. Thus, in some instances it is possible that as many as three or four primary factors may be concerned in the production of an edema.

With this understanding of the mechanism and classification of edemas, the principles of treatment are easily appreciated. Thus, in cardiac edema the principal aim is to reduce the capillary pressure by restoring compensation. This is accomplished in many ways, by restricting activity, that is by lessening the work of the heart, by digitalis, by removing pleural and peritoneal exudates, by reducing weight, by thyroidectomy and other measures. The reduction of capillary pressure in thrombophlebitis and other forms of venous obstruction requires little comment.

In the edema of chronic renal disease and of malnutrition, the principal object is to raise the level of serum protein. This may be done by increasing the intake of protein or by favoring its absorption. In nephritis, an effort should be made to increase the protein intake to an amount

which will at least equal the loss of albumin in the urine and, if possible, to a degree which will restore the serum protein to or toward the normal level. This may be safely done, except in a few advanced cases of nephritis or nephrosis in which the increased protein causes a dangerous rise in the nonprotein nitrogen. In nutritional edema, merely feeding sufficient protein may be sufficient; or, in those cases in which disease interferes with the absorption of food, treatment and control of the trouble which is responsible for the malabsorption may be necessary. In certain cases, repeated blood transfusions may serve very well to raise the serum proteins temporarily, influence the edema favorably, and start the patient on the road to recovery.

In the case of the edemas due to capillary damage, the repair restoration of the capillary endothelium to normal is clearly indicated, but this is difficult from the point of practice. It is true that angioneurotic edemas are favorably influenced by epinephrin and similar substances. In acute nephritis and certain poisonings, however, there are no measures effective directly against the capillary injury. In these cases, the immediate damage, if not fatal, is repaired and in acute nephritis, edema often disappears, not to return until the chronic stage of the disease permits the loss of sufficient protein to produce an edema due to lowered osmotic pressure. In the acute phase, treatment with diuretics, which will be discussed below, is usually ineffective, but restriction of salt and water may be helpful, and in some poisonings blood transfusions may be of assistance.

The edemas due to lymphatic obstruction are notoriously hard to treat. My experience, however, as well as that of others, has shown that vigorous efforts to limit the edema by such means as diuretics, restriction of salt and water, special postures, et cetera, all of which are to be discussed later, will tend to prevent a constantly increasing edema which in so many instances results in great disability. Such operations as have been proposed for the relief of lymphatic obstruction have not so far proven very effective or satisfactory.

Although this discussion has indicated

clearly the primary objectives in the treatment of the four classes of edema, emphasis should be laid on two important factors. The first is the importance of recognizing that in many cases the edema is due to more than a single primary cause and requires more than one major type of treatment. Too often we are inclined to look upon the edema in heart disease as due to heart failure, that is to increased capillary pressure, only. Often it is due partly to a lowered osmotic pressure of the blood as well, which must also be treated if good results are to be obtained. Too often the edema of chronic nephritis is thought of only as nephritic edema, that is edema due to lowered serum proteins. Often there is an element of increased capillary pressure (heart failure) as well which digitalis will relieve.

The second factor is the tendency to neglect control of the secondary factors as an effective means of treatment. The regulation of salt and water intake, the support of relaxed tissues with bandages and elastic stockings, the proper use of posture, such as rest in bed, elevation of limbs, et cetera, the recognition of the influence of environmental temperature may make all the difference between success and failure in the treatment of all the various types of edema.

I have reserved until the last the discussion of diuretics. Though the latter may exert a very favorable influence, they do so by indirect means without influencing directly the fundamental factors involved and their effect is often temporary. Therefore, it is important that every effort be made to remove the primary causes whenever possible and to control the effect of the secondary factors. When this is done, one may expect from diuretics their full effectiveness and a better than usual result. The most useful diuretics are the mercurial compounds, notably salyrgan, the xanthine diuretics, theobromine sodium salicylate, theobromine calcium salicylate and theophyllin, and the acid salts such as ammonium chloride. Of these salyrgan is the most effective and may be used to great advantage in cardiac, nephrotic, and lymphatic edema. Diuresis up to ten liters in twenty-four hours has been observed in cardiac edema and it may be repeated at intervals.

Evidence of renal insufficiency is of course a contraindication, and it, as well as other diuretics, are seldom necessary in uncomplicated nutritional edema. Of the xanthine diuretics, theophyllin is most useful and may be taken over considerable periods to maintain freedom from edema, or restrict it, in heart disease, nephrosis, and lymphatic block. Theobromine sodium salicylate and theobromine calcium salicylate are less effective and less free from unpleasant effects. Ammonium chloride is useful in combination with other diuretics and is particularly used with salyrgan in the control of edema and ascites in cirrhosis of the liver. It should be emphasized again that these drugs act by modifying fluid loss through the kidney and should not be used to the exclusion of serious effort to correct the fundamental cause of the edema.

It is, of course, too much to expect that an understanding of the mechanism of edema, a satisfactory classification, and a clear concept of what is needed for treatment will enable us to relieve all cases of edema. Nevertheless, a proper appreciation of the principles involved will enable us to treat our patients, with this symptom, more intelligently and secure results superior to those which would otherwise be obtained.

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CHART 1

<i>Primary Causes of Edema</i>	<i>Secondary Factors</i>
1. Increased Capillary Pressure.	1. Low Tissue Pressure.
2. Lowered Osmotic Pressure.	2. High Salt and Water Intake.
3. Damage to Capillary Wall.	3. Posture.
4. Lymphatic Obstruction.	4. Heat.
	5. Nerve Changes.

CHART 2

<i>Primary Types of Edema</i>	<i>Clinical Occurrence</i>
1. Increased Capillary Pressure.	Venous Obstruction. Cardiac Failure (Congestive).
2. Lowered Osmotic Pressure.	Nutritional Edema. Nephrotic Edema.
3. Damage to Capillary Wall.	Inflammation. Acute Nephritis. Poisonings.
4. Lymphatic Obstruction.	Lymphatic Obstruction. Elephantiasis, et cetera.

DISCUSSION

DR. J. O. MANIER (Nashville): Mr. President and members of the Tennessee State Medical Association: I think that Dr. Youmans is to be most highly commended on the paper that he has presented to this body. It has not been my pleasure to hear or to read any paper which had in it as little lost motion or as little wastage of words. Dr. Youmans has left nothing with which one could disagree; he has left nothing much that one can add to what he has said, so that one in discussing this paper is largely reduced to agreeing and possibly trying to amplify in the discussion something that the time allotted to him in the reading of the paper did not permit him to say.

The paper you have just heard illustrates how the same physical findings or objective symptom may occur in a number of unrelated disease states and have as its modus operandi of development a number of different disturbances of normal bodily physiology. Also it is very clearly shown, though there are four fundamental primary causes concerned in the development of edema, that is, increased capillary pressure, decreased osmotic pressure, damage to capillary walls and lymphatic obstruction, that there are also operative certain secondary factors as contributory causative agents, such as tissue tone or pressure, posture, fluid and salt intake, environmental temperature, etc., and that the neglect of attention to these latter, when present, will often interfere with the success of management even when the primary factor is clearly understood. Furthermore, it cannot be too often emphasized that edema, though a common and easily recognized finding, is often quite complex in its etiological background and by no means is due to only one of the primary causes mentioned above, but in most instances to several or all of them. Failure to recognize these fundamental facts will often mean the difference between success and failure in treatment.

Probably the most common error made in the management of edema has been related to diet and especially its protein content. Years ago there grew up the belief that protein was harmful to any individual showing albumin in his urine due to renal disease, or even to one who without

albuminuria might show hypertension. As a result, many individuals have been kept on such protein restriction that they have lost weight and strength as a result of a lack of an adequate amount of protein to replace ordinary tissue wear and tear. That such old-fashioned ideas should continue to persist is hard to conceive when it has been clearly proven in recent years that even certain edemas of renal origin, especially those of the nephroses with their enormous loss of albumin in the urine, as well as those of some types of nephritis, are directly due to lowered serum proteins resulting from the enormous loss of albumin in urine with a dietary not containing a sufficient amount of protein to even replace that lost through the urine.

It would seem fair to state that practically every case of renal disease needs at least a minimal maintenance amount of protein as well as any other disease condition, that nephrosis needs not only this amount but in addition sufficient protein in the dietary to more than compensate for the large amount lost via the urine, and finally that proteins in the diet in reasonable amounts in chronic renal disease are scarcely ever contraindicated except in those occasional scarce instances where such intake is followed by a definite uptilt in the nonprotein nitrogen of the blood.

While edema is only a symptom and its relief does not by any means cure the underlying condition, yet it cannot be denied on the other hand that its persistence to any degree may definitely interfere with improvement in the basic disease state. This might be said to be especially true of cardiac edema where the ordinary principles of rest, digitalis, etc., may create some improvement in the picture of congestive heart failure, but extensive edema often persists, adding its load to the faltering circulation and creating sufficient discomfort and annoyance to interfere with the patient securing the necessary bodily rest to enable compensation to more readily occur. In such instances as this, one is forced to treat the existing symptom itself, though realizing that such treatment does not directly affect the underlying causative disease nor prevent the future recurrence of the symptom itself. In such instances as this, often most satisfactory results can be obtained through the use of salyrgan, one of the present

mercurial diuretics. The results from this drug, however, will be greatly enhanced if for several days preceding its administration patients are put on a Carrel diet or some form of total fluid restriction of not over 1200 cc. in twenty-four hours, and in addition given fairly large doses of ammonium nitrate or chloride, sixty to ninety grains a day, as an adjuvant diuretic. The results obtained from the combination of these three principles, salyrgan, fluid restriction, and ammonium salts, far exceed their use separately. However, even this combination is not always effective in producing diuresis, and in several such resistant cases I have seen excellent results obtained when in addition ouabain was administered intravenously more or less synchronously with the salyrgan, the digitalis that may have been administered of course being first discontinued.

DR. C. H. SANFORD (Memphis): I think it is quite probable that the majority of us are unable to comprehend and fully appreciate the masterly paper that Dr. Youmans has just given. I have personally read over his paper a number of times and each time I do, I learn something additional.

I am extremely glad that Dr. Youmans has emphasized the fact that other things besides congestive heart failure and lesions of the kidney produce or contribute to the production of edema. From a practical standpoint I see, and I know you see, a number of individuals with a very slight pitting around the ankles, a slight swelling of the feet, which gives a great deal of concern to certain neurasthenic individuals, and many of these cases occur among doctors and members of doctors' families, among nurses, who feel that the presence of edema, no matter how slight and no matter if it does occur only at the end of a very hot day after the patient has been on his feet a great deal, signifies severe cardiac or renal damage.

Incidentally, I am sure that your experience will verify the statement that it is oftentimes very difficult to convince these individuals that such slight pitting edemas are perhaps not of such grave clinical significance.

I have certainly enjoyed Dr. Youmans' splendid paper, and I thank him for the privilege of discussing it.

BRONCHIAL ASTHMA*

WILLIAM CALVERT CHANEY, M.D., M.S. in Medicine, F.A.C.P., Memphis

OF COURSE, in such a short paper no attempt shall be made to cover the entire subject of asthma. A few important points in the diagnosis and treatment only will be considered.

According to Waltzer, "bronchial asthma may be defined as that form of atopic illness which manifests itself in recurrent attacks of paroxysmal dyspnea, particularly pronounced in the expiratory phase."

It is not an uncommon disease. In the United States there are 500,000 to 1,000,000 chronic asthmatics and almost an equal number of seasonal asthmatics. Asthma has been a somewhat neglected disease until recently. Some years ago the only ones who took the disease seriously were those who had it. One of the reasons for this attitude has probably been the fallacious idea that white mules and asthmatics never die.

Since the advent of allergy and the recognition of asthma as belonging in this big group of allergic diseases along with hay fever, vasomotor rhinitis, eczema, urticaria, etc., wonderful strides have been made in the treatment of this disease. From what was at one time considered an almost hopeless situation we have advanced to the point where we believe that about fifty per cent of these patients can be relieved of their symptoms. In this condition the term "relief of symptoms" is more accurate than "cure." According to Vaughan, who gives the results of seven allergists, cures have been reported in from twenty to sixty-eight per cent and good results from twenty-four to ninety-one per cent.

The allergists have run ahead and blazed a trail toward the relief of asthma, like an army entering a new territory. It now becomes the duty of every physician to try to strengthen the position taken by adding helpful suggestions, or more perfect tests than those now available, or giving us a better understanding as to the true nature

of the disease. In other words, if asthma can now be relieved in approximately fifty per cent of cases by using methods of treatment suggested largely by allergic testing, might not the percentage be raised higher if more attention were paid to some other angles of the disease? I am aware of the fact that the suggestions about to be made are known and are being carried out by some of the leading allergists.

The first suggestion is that the otolaryngologist and the allergist get closer together in their ideas as to the true nature of asthma and the best means available for its treatment. In a review of more than 1,650 cases of asthma treated by twelve otolaryngologists, they reported "cures" varying from none to seventy-four per cent. Seven allergists in approximately the same number of cases (1,680) report "cures" from twenty to sixty-eight per cent. In all probability most of these cases were reviewed also by the nose and throat specialist. By a better understanding between the two groups this percentage could certainly be made better. The otolaryngologists differ widely among themselves as to the causation of asthma. There are those who believe the disease is entirely secondary to upper respiratory infection while others agree with Baum that asthma is in reality a generalized disease, that involvement of the sinuses is just another allergic manifestation of the disease; that nasal and sinus operations should be done only if the condition is serious enough to require surgery if the patient did not have asthma. The otolaryngologist can give invaluable help in relieving the asthmatic. He can tell by looking at the nasal mucous membrane whether the condition there suggests allergy or an infection. He has taught us to make nasal smears to look for the presence of eosinophiles. A large number of eosinophiles is practically diagnostic of an allergic condition.

It is highly important that all of us draw tighter the strings of diagnosis in the problem of asthma. In other words, all who

*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1936.

wheeze do not have the true or allergic type of asthma. There is the well-known cardiac asthma and also the occasional case of asthma complicated by a cardiac disease that may be a potent factor in the patient's respiratory embarrassment. In the proper diagnosis of true asthma, we must exclude, in addition to heart disease, apical tuberculosis, substernal goiter pressing upon the trachea, malignancies of the thyroid gland, a foreign body in a bronchus, exudate in the trachea, tracheal tumors, primary carcinoma of a bronchus, bronchiectasis, enlarged glands of the hilum, and aneurysm. A shoemaker wheezed for nineteen years because of a small nail in the right main bronchus. Skin tests would not have helped in this diagnosis.

We cannot do very much about the factor of inheritance in allergic conditions, but we can study more thoroughly certain secondary precipitating causes that may in a general way contribute greatly to the production of asthmatic attacks. Maytum has said: "The allergic patient might be compared to a loaded gun with many triggers." Included in the many triggers, of course, are principally the specific excitants, such as pollens, animal danders, feathers, dust, molds, etc. As secondary precipitating causes I have reference to the influence of smoke, fumes, emotional states, acute and chronic infections, sudden changes of temperature, all kinds of dust, fatigue, overeating and attacks of constipation, etc. The asthmatic is oftentimes forced to live a rather sheltered existence.

Let the allergist approach the study of his asthmatic patient as thoroughly by the indirect method as he now does by the direct. By the direct approach we mean, of course, skin testing in an attempt to identify the offending inhalants, ingestants, infectants and injectants. In a discussion of this subject by Maytum, he says that about sixty per cent of his patients who had asthma gave positive tests and about one-half of these positives were to pollens. He says further, "Skin tests should be considered as only an aid to diagnosis, and it should be remembered that testing without careful interpretation and correlation with

the history may lead to more confusion than assistance in a given case." The approach to the diagnosis of asthma by the indirect method may be discussed from many angles, but the most valuable approach is the use of a dust-free room and an elimination diet. If possible, the allergist should make an actual survey of the patient's home. Like a detective he must search for all sources of dust and other inhalants. A stuffed bird on the mantel of the living room may be the sole cause of the asthmatic attacks. A person who lives in an old damp house has more potential causes than one living in a home that is new. If a patient is put to bed in one room of his house that has been thoroughly cleaned and stripped of all draperies, pillows, rugs, etc., and then while in this room he is free of his attacks, it is possible to work out the causes of his attacks by bringing into this room one suspicious article after another. He may then be taken to the stable, barns, and chicken yards and the effect of each noted. The methods of the elimination diet are familiar to all and need no explanation here. The three foods to be regarded with the greatest suspicion are wheat, milk, and eggs.

The great value of a carefully-taken clinical history in the diagnosis of asthma has been repeatedly emphasized. It is without doubt the most valuable single diagnostic procedure in the approach to asthma. Rackemann says: "Recent clinical experience has led to the use of certain 'tricks' in history taking, in allergic diseases, which are of such practical importance that their recognition constitutes a virtual advance in diagnosis and treatment."

If the allergist can get the asthmatic victim in the earlier stages of the disease before secondary changes have occurred, such as emphysema and bronchiectasis, the chances of a cure would obviously be much greater. Not much can be done for many asthmatics who have had their disease in a severe form over many years until their lungs contain many large bronchiectatic cavities filled with pus. They have truly reached the "tabetic stage" of their illness. Getting the asthmatic in the early stages of his disease must come through the education of the public. The doctor must remem-

ber that many cases of so-called bronchitis in the young are on an allergic basis.

Much more attention should be paid to the nervous or psychic factors in the production of the asthmatic attack than is generally done, as there is a certain nervous emotional temperament in these people. Between attacks they are very alert and much above the average mentally. They rightfully have a fear of having an attack and sometimes seem to induce one when the stage seems properly set. Hurst considers the most common psychological factor in asthma is *expectation*. While fear and depression seem to bring on an attack, sudden excitement or anger will oftentimes relieve one. Hurst has gone so far as to suggest that anger relieves an attack, because such an emotional explosion causes the secretion of adrenalin. I know one allergist who claims that he can talk an occasional asthmatic out of his attacks. It is interesting to note that about seventy-five per cent of asthmatic patients are relieved of their attacks when they enter a hospital. This may be due, of course, to getting away from certain specific allergens, but expectation of relief by hospital treatment is a factor. Berkart classifies asthmatic attacks as "anxiety neuroses," due to a fear of an impending attack. No matter how strong the neurosis side of the attacks may be, however, there must also be an allergic basis. The nervous or psychic factors of asthma should be investigated in every case. A nervous, fretting mother, standing guard over her asthmatic child and armed with a hypodermic needle filled with adrenalin, has many times been as much of a causative factor in an attack as feathers and dust.

Constitutional defects, as a general cause of asthma, deserve more consideration and study. Under this heading we should consider such possibilities as vagotonia, endocrine disturbance, acidosis or alkalosis, the so-called "exudative diathesis," and abnormal mineral metabolism. Asthma, like arthritis, is a constitutional disease, and anything that can be done to improve the general health of the patient will certainly lessen the attacks. Conditions of glandular disturbance should be corrected, if possible. A disturbance of calcium metabolism, es-

pecially if there was a subnormal amount of calcium in the blood stream, would most assuredly increase muscle irritability to the point where the slightest allergic tendency might break over into well-defined asthma. In these cases, therefore, an attempt should be made to promote normal calcium assimilation.

An attempt has been made in this paper to emphasize the nonspecific causes of asthma or the so-called general causes, not that they are more important than the specific causes, indeed, they are far less important, but because they are generally overlooked or forgotten in the treatment of the average asthmatic.

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DISCUSSION

DR. D. M. CARR (Memphis): Dr. Chaney has just given you an excellent, broad discussion of the treatment and the causes of asthma. I wish more to emphasize one or two of the statements he made and carry on with their implication.

It has very aptly been said that all is not asthma that wheezes. Dr. Chaney mentioned a number of the specific causes of asthma which are not based upon allergy. I wonder if we appreciate how many cases of so-called asthma developing in an individual past thirty years of age arise from carcinoma of the bronchus. Our textbooks printed twenty years ago will tell us that is a rare condition. We know now that this is far from true. Ten per cent of all carcinomas arise primarily in the bronchus as found in the summary of over 4,000 routine autopsy cases in Europe and in this country. It is a common disease.

The reason it is not more often recognized is because the symptoms come from the infectious

manifestations which follow obstruction of the bronchus. A wheezing is frequently the presenting symptom. Therefore, a patient past thirty years of age who begins to wheeze at that time, periodically at first, becoming more constant, must be suspected of having a carcinoma of the bronchus, especially if a cough develops and any sign of blood is seen in the sputum.

A foreign body has been mentioned. Some of these foreign bodies remain in a bronchus for years without recognition.

Bronchiectasis also has been mentioned. Lung abscesses are sometimes so chronic and so obscure in their general symptoms that they go unrecognized without special examination.

The implication of these facts is that along with our allergy tests, along with our X-ray films that must be taken before treatment of asthma is undertaken, one must add the bronchoscopic examination and often the injection of iodized oil with X-ray examination following it. Incidentally,

the iodized oil frequently relieves the asthmatic wheezing for a period of time varying from a week to two or three weeks. Dr. Balyeat of Oklahoma City is using it as one of his therapeutic measures with a great deal of success, and many of us have used it occasionally on patients.

I wish to emphasize the need of searching for these nonallergic causes of wheezing.

DR. W. C. CHANEY (closing): I wish to express my appreciation to Dr. Carr for his discussion. I think there are a certain number of cases that we see where we should by all means have a bronchoscopic examination made and rule out carcinoma, as he said. Then again, in these old cases where the patient spits up a lot of pus, because of large bronchiectatic cavities, the doctor who is skilled in the use of the bronchoscope can dilate some of those bronchi that are constricted above the cavity and give inestimable relief to the patient.

CATHETERS

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INTRODUCTION

SAMUEL JOHNSON once said, "Illness makes a man a scoundrel." It may as well be said the wrong catheter will make two scoundrels—the patient and the physician. It has taken 5,000 years to bring our catheters to their present status. A similar length of time has been spent in developing the present technique employed in their use. It is important that anyone who finds the use of a catheter necessary in the treatment of a patient be familiar with the complete armamentarium, the technique and methods employed, and especially the dangers which may result from the improper choice or use of catheters.

The use of catheters is an art as well as a science. The scientific part consists of knowing the armamentarium complete. One should be familiar with the names, sizes, types, and construction of catheters. It is equally important to know the indications for and the technique of the use of each catheter. Having at one's disposal all the catheters known to urology, it is an art to be able to use each with the greatest ease and comfort to the patient. Each case demands a little variation from the routine if one practices art and science in its use. The proper use of the proper catheter in a given situation is a determining factor between life and death in a much larger per cent of cases than is usually supposed. It is interesting to note the development and use of catheters and to review briefly our present equipment.

HISTORICAL

As far back as we have records from which the cause of death may be deduced men have died from retention of urine. The earliest writings of the Egyptians, 3,000 to 1,550 B.C., mention the use of catheters and state that they were made of bronze and tin imported from Britain. A Hindu hymn written about 1,000 B.C. cited the use of catheters in a religious rite for regulating the flow of urine. The Chinese, 100

B.C. to A.D. 1,000, made their catheters from the hollow leaves of the *Allium Fistulosum*. Celcus mentioned the catheterization of both males and females in 25 B.C.

The ruins of Pompeii (Greeks) buried in A.D. 79 revealed metal catheters. Catheters were a part of the equipment carried by the Roman physicians in A.D. 100 to A.D. 200. Galen was the first to describe the S-shaped catheter. He lived from A.D. 131 to A.D. 210. The Arabs learned of catheters and their use from Galen. Avicenna, an Arabian, introduced the first flexible catheter in A.D. 1036. From this time until 1700 there was no progress in the making of catheters. A German, L. Heister, in 1739, suggested that the old catheters might be improved. He made catheters from silver and preferred a thick catheter to a thin one. His catheters are not unlike those in use today except they are longer and have larger apertures.

Theden introduced the elastic catheter in the early part of the eighteenth century. His elastic catheter was replaced by a catheter made by Pikel, of Warzburg, in 1738. Pikel's catheter was made of silk cylinders woven over a probe. Richter suggested a catheter with a point bent about one inch, and his idea is carried on to our modern instruments. From 1750 to 1900 no important change was made in the catheters used. Since 1900 many variations in the tips, eyes, types, and curves have been introduced.

SCALES OF MEASUREMENT

When catheters were introduced into general use in the practice of medicine it became necessary to have a definite scale of measuring them. It naturally followed that each country had its own scale of measurement. The French, English, and Americans have devised separate scales, but as catheters and instruments became more standardized the French scale has been almost universally accepted. A great many catheters and sounds may be calibrated in

all three systems, English, French, and American.

The French have two scales, Charriere and Benique. We will dispose of the Benique scale by saying that the number of the catheter or instrument is doubled that of the Charriere scale. The Benique scale is used to prevent one-half steps in the Charriere scale. Thus a 22½ catheter (Charriere) is the same as a 45 catheter (Benique).

The Charriere scale, which from now on will be spoken of as the French, has 1/3 mm. as the unit of measurement of the diameter of the catheter. Thus an F. 16 equals 16 x 1/3 or 5 1/3 mm. in diameter. Therefore the diameter of any catheter measured by the French scale is the fraction $\frac{\text{no}}{3}$ mm. Sizes most commonly used are F. 16 to F. 22.

Americans have made their unit of measurement for the diameter of the catheter one-half mm. Thus an American 14 equals 14 x 1/2 or seven mm. in diameter. It then follows that the American number equals two-thirds the French number for the same catheter. An Am. 10 equals a F. 15. The American scale is rarely used, even by our own instrument makers.

The English system of measurement is still used for soft rubber catheters in England, but for ureteral catheters they usually use the French scale, as these catheters are made in France. In America, English catheters are occasionally used. The sizes most commonly used are E. 5 to E. 10. It is well to have a simple rule by which one can compare the English scale with that of the French. F equals E x 2—2. Also E equals $\frac{F + 2}{2}$. The above formulae are accurate enough for all practical ranges of catheter sizes.

In general urological work, a thorough knowledge of the French scale is adequate; however it is convenient at times to be able to make comparisons with the other scales.

CLASSIFICATION OF CATHETERS

A. Catheters may be classified according to the materials from which they are made.

1. *Rubber*.—By far most of our catheters

are made of soft rubber. These may be quite soft as with the Latex variety, or quite firm as the solid tip catheter. Rubber catheters of any type, size, with all kinds of tips and apertures are available. Sizes most commonly used are F. 10 to F. 22. They are easily sterilized by boiling.

2. *Metal*.—Metal catheters are composed of bronze, tin, iron, or silver in various combinations. There are curved ones for males and straight ones for females. They are available in all the usual sizes, and may be sterilized by boiling. We strongly advise against the use of any metal catheter in the male.

3. *Woven Silk*.—The advantage of this group of catheters is their firmness, yet they are flexible. They are made in all sizes, with straight tips, coudé tip or bicoudé tips. Also they are available with tips for screwing on to filiforms, a combination of vital importance in urological work. These catheters have one disadvantage—they cannot be boiled. They are sterilized by soaking them in some such solution as a 1:4000 bichloride solution.

4. *Glass*.—Straight glass rods have been used for routine catheterization in the female. They have been broken in the urethra and bladder, and have no place in the armamentarium of any physician.

B. Catheters are also classified according to the type of tip or curve they possess. Below are some of the usual types most commonly used with indications for each mentioned.

1. *Solid Tip*.—A Nelaton (soft rubber) catheter with a solid tip, and usually has one eye one cm. from the tip. Its only indication is that of routine catheterization. It makes a poor retention catheter as it is too hard to be comfortable, and with only one eye it becomes obstructed quite easily.

2. *Hollow Tip* (Wishard Catheter).—This is the most valuable catheter known to the urologist. It may be used for routine catheterization; it makes a good retention catheter as it has two eyes and may be quite soft or firm. This catheter with a mandrin is usually all that is needed in cases difficult of catheterization as stricture, enlargement of the prostate, and vesicle neck obstruction. The hollow tip cath-

eter has two eyes, one 1 cm. and one 3 cm. from the tip. It may be threaded over a mandrin and used for almost any case except strictures with very small lumens. The mandrin is firm enough for adequate pressure to be made, and it may be molded to fit any type of urethral curve. This is of great value in getting by false pockets. With a full assortment of hollow tip catheters there are few occasions where additional catheters are needed.

3. *Whistle Tip or Open End Catheter*.—These catheters have an open end with one eye three-fourths cm. from the end. They are our best retention catheters, but are often quite difficult to insert. They are of value in washing debris out of the bladder. A suggestion is offered for improving the whistle tip catheter by making a pocket in the end so that a mandrin may be used, and adding an additional eye two and one-half cm. from the tip.

4. *Coudé and Bi-coudé*.—The coudé or elbow tip is about one cm. long. This tip is of value in cases difficult of catheterization because of vesicle neck obstruction. The bi-coudé catheter is of value in decompressing a bladder filled with old blood. The tip may be placed high and anteriorly in the bladder, thus allowing the urine and serum to escape as their specific gravity is less than that of blood clots.

5. *Olivary Tip*.—Valuable in strictures, especially old strictures, and in vesicle neck obstruction.

6. *Pezzar Catheter*.—The ideal catheter for suprapubic cystotomy as the bladder may be closed around the bulb. It is often used for an enterostomy tube, and sometimes used as a retention catheter for the female.

7. *Malecot*.—These catheters are available with two or four wings. They make the best retention catheters for the female. To introduce the catheter it is stretched over a mandrin, thus straightening the wings. The position of the distal tip of the catheter on the mandrin is marked so that in removing the catheter one will know if the tip of the mandrin has slipped out of the catheter. This is important in preventing the mandrin from puncturing the bladder wall.

8. Metal Catheter Curves.—

a. Coudé.—Has been described above.

b. Van Buren.—This curve conforms to the urethral curve in children. Sizes F. 8 to F. 12 are usually used.

c. Benique.—This curve corresponds to the urethral curve of the adult male. It is of value in cases difficult of catheterization because of stricture, false passage, and enlargement of the prostate, but is very dangerous in untrained hands. Anything that this metal catheter will do can be done by a soft rubber catheter on a mandrin.

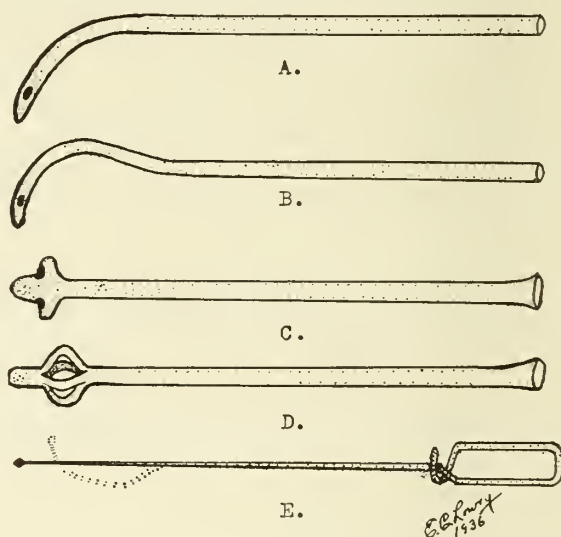


Fig. I. A. Metal Catheter—Van Buren Curve. B. Metal Catheter—Benique Curve. C. Pezzar Catheter—Soft Rubber. D. Malecot Catheter—Soft Rubber. E. Mandrin—Flexible Wire.

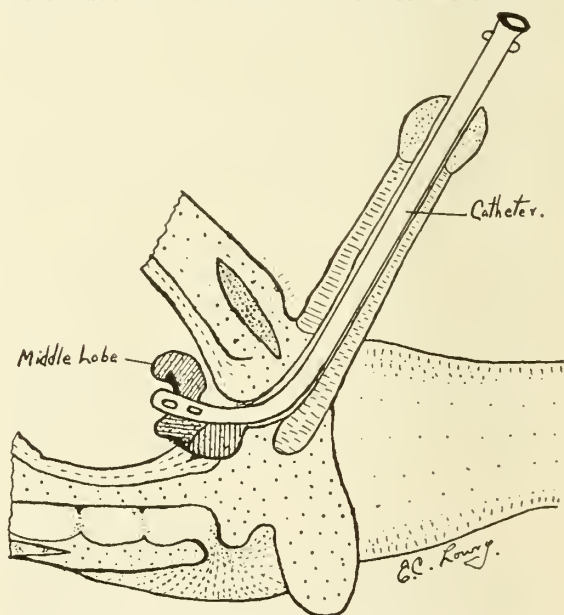


Fig. II. False Passage in Middle Lobe of Prostate. Produced by Metal Catheter.

The great danger in their use is making a false passage in the urethra or through the middle lobe of the prostate. One case was seen recently where a false passage had been made anterior to the pubic bone.

9. *Follow-up Catheters*.—This type of catheter may be made of woven silk or metal. They have an attachment by which they may be screwed on to filiforms, or the two may be made together. This group of catheters are essential in catheterizing some cases of stricture, and in dilating strictures.

Ureteral catheters may have the hollow tip, open end, or olivary tip.

It is called the Lowry two-way catheter.¹ It was designed to keep the suprapubic wound dry and thereby hasten healing and the early reestablishment of the flow of urine through the urethra. It is comfortable to the patient both in and out of bed. When this catheter is inserted it keeps the wound dry and healing takes place quickly. The expenses of dressings are reduced to a minimum, and the period of hospitalization is shortened by days or even weeks.

It is a soft rubber tube, F. 24 in size and twenty-six inches long. One end is open, the other closed, the latter a hollow tip. In the center is a two-winged Malecot bulb with two large eyes on either side, the bulb and eyes consuming a space of two and one-half inches.

The catheter may be inserted through the urethra with a mandrin or passed from within the bladder outward through the urethra. The abdomen is then closed in layers around the suprapubic portion of the catheter. The closed end is then cut across and both ends connected to a bottle. (See Fig. IV.) When the suprapubic wound is

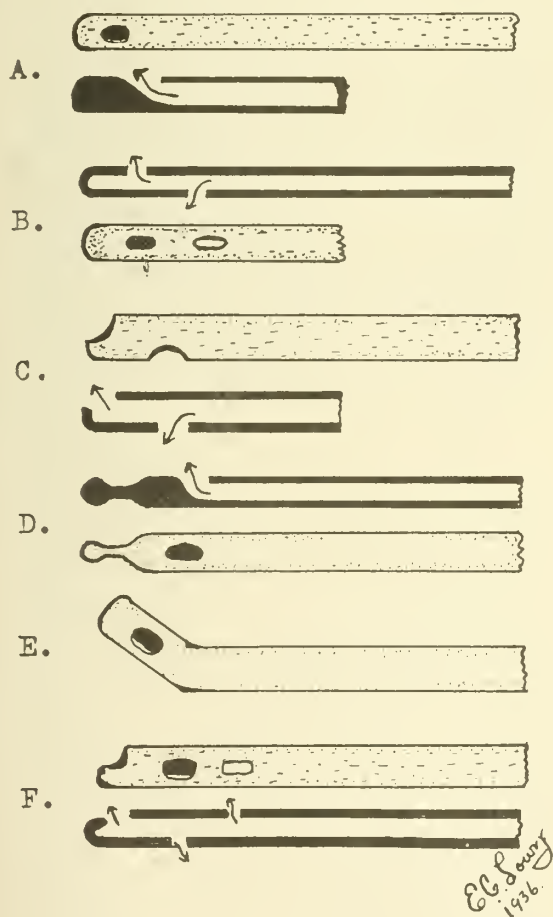


Fig. III. A. Nelaton Solid Tip. B. Wishard Hollow Tip. C. Open End or Whistle Tip. D. Olivary Tip. E. Coudé Tip. F. Suggested Open End Catheter (for Mandrin).

10. Brief mention will be made of a new catheter which was designed by one of us for use in cases of suprapubic cystotomy.

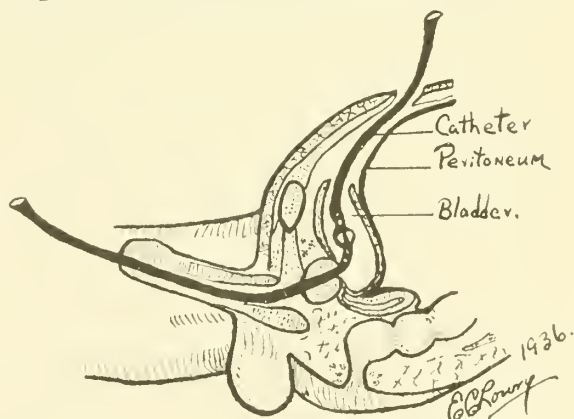


Fig. IV. Sketch showing the Lowry two-way catheter in position.

healed, usually five to eight days, gentle traction is made on both ends of the catheter and the bulb drawn to the surface of the abdominal wall. The bulb is then di-

¹Shown with lantern slides at the following meetings: (1) Southeastern Branch, American Urological Association, Nashville, Tennessee, December 7, 1935. (2) Nashville Academy of Medicine, January 28, 1936. (3) Tennessee State Medical Association, Memphis, April 15, 1936. (4) American Urological Association, Boston, May 21, 1936.

vided through its center, thus removing the suprapubic half of the catheter. The urethral portion then retracts to its normal position in the bladder where it remains as a retention catheter until the suprapubic sinus is completely closed. This catheter is indicated in any case of suprapubic cystotomy when it is desirable to close the suprapubic wound as soon as possible, as following prostatectomy and cystotomy for stone.

Illustrations are presented to simplify the above discussion:

Fig. I. Metal catheter curves. Special catheters—Mandrin.

Fig. II. Sketch to show how a metal catheter may make a false passage through the middle lobe of the prostate.

Fig. III. Types of catheter tips in general use.

Fig. IV. Two-way catheter in position.

SUMMARY

There is so little written about catheters it is the purpose of this paper to briefly summarize a few simple facts about them.

It is written especially for students and interns.

1. The history of catheters is reviewed.

2. The scales for measuring catheters are presented—French, English, and American.

3. Catheters are classified according to materials of construction and according to the type of tip or curve they have.

4. Sizes and indications for the various types are mentioned.

5. A suggestion is made for improving the whistle tip catheter by adding a pocket in the end so a mandrin may be used to insert it, and adding another eye.

6. A new two-way drainage catheter is presented.

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THE JOURNAL

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H. H. SHOULDERS, M.D., Editor and Secretary

JULY, 1936

EDITORIAL

CONSERVATISM OF THE MEDICAL PROFESSION

The medical profession is taken to task for its conservatism by Mr. T. H. Alexander in his column, "I Reckon So." The article appeared in the morning Tennessean of July 5, 1936.

Mr. Alexander is a capable writer. We believe him to be very honest. With his pen he exerts a large influence. He is a friend of the medical profession and, doubtless, feels that he is giving a gentle spanking to an intimate friend.

He takes his text from the moving picture, "Louis Pasteur," which was shown in Nashville recently. In the picture the Academy of Medicine of Paris is shown as opposing Pasteur's ideas. The struggles of Pasteur were portrayed in such a manner as to create an emotional reaction in the minds of the average layman quite favorable to anyone who thinks he has found something of value, or who pretends that he has found something new.

It was portrayed in the picture that the Academy of Medicine did challenge the opinions expressed by Pasteur and demanded proof. Pasteur accepted the challenge and in the case of anthrax in sheep proved his point. The picture portrayed the doctor who opposed him most bitterly as extending congratulations upon his achievement. At a later time the Academy of Medicine honored Pasteur in every way that it could. This was also portrayed in the picture. In fact Pasteur did not object

to having his ideas subjected to tests and criticism.

The fundamental fact is that the organized profession of medicine has accepted every worth-while advance in medical science, from whatever source, just as soon as the measure has been subjected to the proper test to prove its value. For example, insulin was accepted just as soon as its value was proven. Liver extract for pernicious anemia was accepted just as soon as its value was demonstrated.

Mr. Alexander, along with many other laymen, fails to recognize the serious responsibility that rests upon a doctor who attempts to test the value of a new remedy on a private patient. For example, within the last three years a lay magazine published an account of some work done by a research man in connection with poliomyelitis and its prevention. The impression was created that an agent had been produced which would prevent poliomyelitis. A little bit later a medical magazine carried an account of the death of several children whose deaths resulted from the administration of the treatment. In so far as we know, the lay magazine that carried the first story did not carry the second one.

The medical profession is not opposed to research and progress. As a matter of fact, the medical profession encourages research in every way. Money and awards are given away every year by the American Medical Association for the promotion of research and in the recognition of the accomplishments of research. One entire department of the American Medical Association, known as the Council on Pharmacy and Chemistry, is devoted entirely to the investigation of remedies. These new proposals are subjected to tests and analysis. When the results of tests are such as to warrant its indorsement the council attaches its approval to the drug. The council also devotes a large amount of time to the promotion of truth in advertising. When fraudulent claims are made about the value of a drug or procedure a halt is called.

This council has been challenged in every way that a scientific body could be challenged for its alleged conservatism. It has been challenged in the courts and up to the

present time not a single case has been won against the council before a jury of laymen. The benefits to the public from this council can hardly be appraised.

Each individual doctor must not make guinea pigs out of his private patients. He must not try out every new remedy that is suggested or proposed. If he did not possess that quality of conservatism which demands proof that a certain measure possesses value then humanity would pay with life for such a breach of conservatism.

Yes, the medical profession is conservative. Our conservatism is of such a type that we make progress safely. We exercise prudence and caution. We demand to be shown and this is the reason that progress in medicine has been so safe. It has been attended by such a small number of tragedies. The safety and the security of the public in a medical sense are protected by this prudence, conservatism and caution.

There are literally hundreds of remedies proposed every year. Wild claims are made for them by their sponsors. Some of these claims are made by honest but overenthusiastic research people. Others are made, of course, by crooks who think they are clever. The medical profession must be equally cautious of both.

Quack cancer cures occur in enormous profusion. If members of the medical profession were to use a small fraction of them in practice the public would pay most dearly.

The medical profession has never failed to accept any remedy or procedure of value to humanity nor has any action on the part of the organized profession hindered or delayed their acceptance any longer than was necessary for satisfactory proof to be developed and presented.

There are inherent dangers in medicine. There are dangers in morphine, ether, and calomel. Drugs and procedures must be used in the proper manner and in the proper situation for them to yield desirable results. Some time and careful checking are required to determine the value of any new procedure as well as its proper use.

In my humble judgment the most effective way to destroy progress would be to

accept every wild-eyed scheme and put it into use without the proper tests and criticism.

Thanks to the conservatism and caution of the medical profession, progress in its true sense is made in medicine every year and will continue to be made every year so long as caution, prudence, and conservatism reign. Conservatism is not static; to the contrary, it is progress within the bounds of prudence and safety.

When the acceptance or rejection of a new procedure is accomplished by some political action, then political influences will dominate. Science, accuracy, prudence, and conservatism will disappear.

DEATHS

Dr. Humphrey Bate, Castalian Springs; University of Nashville, Medical Department, 1889; died suddenly on June 12th.

Dr. B. G. Tucker, Nashville; Vanderbilt University, Medical Department, 1898; aged 60; died June 22.

Dr. W. G. Bogart, Chattanooga; University of Tennessee, College of Medicine, 1889; aged 78; died July 9.

Dr. E. G. Thompson, Memphis; University of Pennsylvania, School of Medicine, Philadelphia, 1913; aged 52; died June 21.

Dr. B. S. Wert, Chattanooga; University of Louisville, School of Medicine; 1879; aged 80; died June 20.

RESOLUTIONS

On June 20, 1936, the Chattanooga and Hamilton County Medical Society lost one of its most active and valued members and past presidents in the death of Dr. Buchanan Sale Wert. He was born in Moulton, Alabama, July 14, 1856. Dr. Wert was graduated from the University of Louisville in 1879.

Immediately after graduating in 1879, he entered practice at Moulton, Alabama, his boyhood home, and remained there two years, then moving to Chattanooga, Tennessee, where he remained in active practice for fifty-two years, up until the time of his death.

Dr. Wert was the dean of the medical profession of Chattanooga and was undoubtedly the best loved physician ever to have lived in the city by the entire medical profession. He was not only a great physician, but never failed to give all the time possible to his church affiliations, as well as his entire life to the aid of suffering humanity, whether or not he received any compensation. He was a man of unusual character in his community and was always trying to make this land a better place in which to live.

Dr. Wert was one of the pioneers of organized medicine in Chattanooga and he never failed to be at all meetings of the local society unless compelled to be absent by necessity, and then he always so informed the society secretary. Dr. Wert was a great friend of the younger men of the profession.

Be It Therefore Resolved, That the Chattanooga and Hamilton County Medical Society deeply deplore the passing of Dr. Wert.

And Be It Further Resolved, That we extend to his bereaved family our sincere sympathy and condolence.

And Be It Further Resolved, That a copy of this preamble and these resolutions be sent to the family of the deceased, a copy spread upon our record book, and a copy sent the secretary of the State Medical Society.

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E. S. BLAIR, M.D.

Approved July 2, 1936.

D. N. WILLIAMS, *President.*

S. H. LONG, M.D., *Secretary Pro Tem.*

NEWS NOTES AND COMMENTS

The last issue of the Journal carried an editorial upon the importance of the code of ethics. We again published the code in that issue. We believe that there may be times when the various county medical societies might want the code of ethics included in some of their publications. We have, therefore, arranged with our printers to keep the type of the code of ethics set up. In this way any of the county societies can at very little expense include the code of ethics in their annual programs or other publications.

Drs. W. R. Bethea and H. D. Gray announce their association for the practice of radiology, 1024 Madison Avenue, Memphis.

MEDICAL SOCIETIES

Bedford County:

On July 17 Dr. Perry Bromberg, of Nashville, will be the guest speaker.

Meetings of the Bedford County Society have been interesting and well attended. We are sure that the July meeting with its guest speaker and other regular attractions will be one of the best meetings of the year.

Giles County:

At the May meeting of the Giles County Medical Society we had as our essayists Drs. Sam Cowan and W. B. Anderson, Nashville. Dr. Cowan gave us a very interesting paper on "Prenatal and Postnatal Care." Dr. Anderson gave a very timely paper on "Delivery in the Home."

These papers were given in keeping with the program of the Tennessee State Medical Association relative to the Maternal Welfare Committee. Our county is one hundred per cent for the program of the Maternal Welfare Committee. Our local Maternal Welfare Committee is composed of T. F. Booth, Chairman, J. B. Wright, and J. U. Speer.

(Signed) T. F. BOOTH, *Secretary.*

(Continued on page 290)

COMMITTEES

The following is a list of the standing committees of the Tennessee State Medical Association provided for in the constitution and by-laws and appointed by the proper authority, together with some special committees appointed under the authority of a resolution by the House of Delegates.

Some of the committees are appointed for a definite period. In such instances the appointment of the committeeman expires with the meeting of the House of Delegates in the year stated opposite his name.

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Not yet appointed.

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AT THE SHILOH NATIONAL PARK

A joint meeting of the medical societies of Alcorn and Tishomingo Counties, Mississippi, and Hardin, Lawrence, Lewis, Perry, Wayne (The Five-County Medical Society), Madison and McNairy Counties, and Chester, Decatur, and Henderson Counties (Tri-County Medical Society), Tennessee, was held at the Shiloh National Park, Tuesday, June 30th.

The following papers were read:

"Acute Hemorrhagic Nephritis in Children," by Dr. L. B. Brackstone, Iuka, Miss. Discussion led by Dr. Henry Sanders, Selmer, and T. J. Stockard, Lawrenceburg.

"Intestinal Obstruction," by Dr. John H. Tilley, Lawrenceburg. Discussion by Dr. Chas. F. Webb, Jackson, and Dr. M. H. McRae, Corinth, Miss.

"Prenatal Care and Some Pathological Conditions in Obstetrics," by Dr. J. E. Pearce, Jackson. Discussion by Dr. A. E. Bostick, Iuka, Miss., and Dr. D. L. Woods, Waynesboro.

"Sudden Deaths," by Dr. W. O. Baird, Henderson. Discussion by Dr. W. E. Boyce, Flat Woods, and Dr. J. W. McClaran, Jackson.

"Skull Fractures with Brain Injuries," by Dr. C. F. Gilbert, Corinth, Miss. Discussion by Dr. Jere L. Crook, Jackson, and Dr. L. C. Smith, Henderson.

About seventy-five physicians were present.

The next meeting will be held in Waynesboro on July 28th.

Hamilton County:

On August 6th the following papers will be read:

"Pelvic Surgery," by Dr. H. A. Laws.

"Some Intestinal Problems; Report of Cases," by Dr. W. J. Hillas.

Knox County:

June 9—"Carcinoma of the Stomach," by Dr. Dewey Peters. Discussion led by Drs. Hugh Reaves, W. P. Wood, and Herbert Acuff.

June 16—Members of the Knox County Medical Society were guests of the Southern Railway Surgeons Meeting.

June 23 — "Ocular Vertigo," by Dr. Robt. S. Leach. Discussion led by Drs. W. W. Potter, H. E. Christenberry, and E. L. Grubb.

There will be no medical meetings until September 15th.

Washington County:

July 2—"Pelvic Pain in the Female," by Dr. J. G. Moss. Discussion by Drs. C. W. Friberg and Carroll H. Long.

"Poliomyelitis," by Dr. W. L. Poole. Discussion by Drs. W. J. Matthews and J. W. Wallace.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Spinal Anesthesia and the Anesthetist. W. L. Garth. California and Western Medicine, May, 1936.

Many anesthetists are hostile to spinal anesthesia because they have not developed a confidence in it and feel that it has cut down the field of their work. However, when under the control of a competent anesthetist, with his knowledge of safety measures in connection with respiratory or circulatory failure, and with his gas-oxygen equipment at hand for instant use, spinal anesthesia becomes a relatively safe and satisfactory procedure.

A preliminary examination should be made as to rule out the bad risks, such as those with histories of coronary thrombosis, advanced myocarditis, and those in shock. A preliminary dose of morphine is given, also a generous dose of one of the barbiturates, to protect the patient with procaine sensitiveness. Ephedrin is also administered as the patient enters the surgery. After injection of the procaine, which is used in a low concentration, the Trendelenburg position should not be assumed until at least ten minutes have elapsed. This precaution prevents the excessive drift of the solution. Carbon dioxide and oxygen should be given after the operation to prevent atelectasis, and the foot of the bed elevated.

In conclusion, the author states the following safety measures should be observed: Cardiac cripples and those in shock are ruled as unsuitable for spinal anesthesia. Procaine in low concentration as three per cent. Minute to minute care of the patient by a competent anesthetist. Free use of oxygen and carbon dioxide in poor risks and at other times when indicated. Lifesaving value of artificial respiration for the occasional patient who does poorly under spinal anesthesia.

DERMATOLOGY

By E. E. BROWN, M.D.
Doctors Building, Nashville

Etiology of Lupus Erythematosus, Occurrence in the Negro. Clyde L. Cumber, M.D., Cleveland, Ohio. Archives of Dermatology and Syphilology, March, 1936.

His observations cover a period of four and one-half years. His conclusions are that it is possible that there is no single cause and that two or more factors may cooperate in the production of the disorder. He has combined his statistics of new diagnoses of cutaneous diseases, viz., 2,264 whites and 1,572 Negroes, with those of Hazen and Fox, making a total of 6,041 whites and 4,483 Negroes. Of this series there were twenty-three white and eight Negro cases of lupus erythematosus, or 3.8 white to 1.8 Negro to the 1,000 cases. Yet he quotes that the tuberculosis death rate per 100,000 for white cases is 68.9 and for Negroes 203. The possible answers are: (1) there is little casual relation between tuberculosis and lupus erythematosus, (2) there is such a relation, but that biologic differences of cutaneous coloring serve to protect the Negro from the atinic rays of the sun.

NOTE: Most observers feel that the sun's rays may serve as a precipitating cause. In this connection I would advise against the fad of getting a sudden sun tan. A few years ago I had a young lady patient who, while fishing on Reelfoot Lake, had the desire to get a quick sun tan. She rolled her white slacks above her knees, her sleeves to her shoulders, and unfastened her shirt at the neck. She was successful in getting the sun tan, but a few days later she developed what appeared to be a typical case of acute lupus erythematosus disseminatus over these exposed surfaces. Cases of this kind are often fatal, but fortunately for her she responded very quickly to gold and sodium thiosulphate and has had no recurrence.

Ten Years' Experience in the Treatment of Lupus Erythematosus with Gold Compounds. Carroll S. Wright, M.D., Philadelphia, Pa. Archives of Dermatology and Syphilology, March, 1936.

Between January, 1925, and January, 1935, he and Schamberg observed 103 cases in private practice. Seventy-six of these have been followed up to the present time. The other twenty-seven did not receive sufficient treatment to be included or could not be traced. Results are tabulated as: (1) cases in which cures followed, thirty-seven per cent; (2) cases in which marked improvement followed, thirty-four per cent; (3) cases in which moderate or slight improvement followed, seventeen per cent; (4) cases of complete failure, twelve per cent. The tables also give duration and the amount of treatment with comments. A few selected cases are reported. Another table classifies reactions. These are discussed more fully in the paper under the following heads: (1) Immediate Reac-

tions, (2) Delayed Toxic Reactions, (3) Cutaneous Reactions, (4) Fatalities. Gold and sodium thiosulphate were found to be most efficacious, and the dosage ranged from five milligrams to as high as 300 milligrams weekly, usually ranging from twenty-five to 100 milligrams. Pruritis was an indication that dermatitis might develop, and when it occurred treatment was discontinued and sodium thiosulphate given. The paper is ably discussed by several leading dermatologists.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
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The Blood Loss During Normal Menstruation. Adelaide P. Barer and W. M. Fowler. A. J. of Obs. and Gyn., 31: 6, 979, June, 1936.

The amount of blood lost with each normal period is information that must be definitely known before considering the significance of menstrual bleeding as an etiologic factor in certain types of anemia. A survey of the literature on this subject shows no uniformity of opinion as to what constitutes the blood loss during normal menstruation.

One hundred normal women were observed in this study, their ages varying from fifteen to forty-three years, who for the most part were members of the hospital staff, in good health, and whose menses were considered to be normal in every respect. A careful procedure is described showing the method of calculating the amount of iron in the menstrual blood. The menstrual blood loss in 100 apparently normal women revealed an average of fifty cubic centimeters.

Two common criteria used by the physician in basing his estimation of the amount of blood lost by the patient are the duration of the menstrual period and the number of napkins used during the period. The unreliability of the criteria is illustrated by charts in this study.

While the menstrual loss has been reduced to terms of cubic centimeters of blood to give a more graphic description of the results, it is not the volume per se, but the hemoglobin and iron content of the menstrual flow, which is of vital importance. The smallest loss for an entire period was six cubic centimeters, or 2.28 milligrams of iron, and this would require a daily iron storage of .08 milligrams to replace this loss. The largest loss charted was 178 cubic centimeters, or seventy-nine milligrams of iron. This individual would necessitate a positive iron balance of 3.29 milligrams of iron for each day of her regular twenty-four-day cycle. This latter amount far exceeds the average daily iron retention and may only be attained by administration of iron in addition to that present in the diet. This continuous excessive iron loss accounts for certain cases of hypochromic anemia which may have been considered as idiopathic.

Radiology in Obstetrics: A Consideration of Its Dependability. R. E. Roberts, B.Sc., M.D., D.P.H., D.M.R.E. The Liverpool Medico-Chirurgical Journal, 44: 17, 1936.

The simplest way to deal with the subject will be to enumerate the various questions which may be put to the radiologist by the practicing obstetrician and to consider the way in which he may endeavor to answer them.

One question, which is being offered the radiologist less frequently since the advent of the Zondek-Aschheim test, is, "Is the patient pregnant?" A fetus of anything more than sixteen weeks' gestation should demonstrate its presence on the film in all cases. Earlier gestation than this may be shown in favorable cases.

"What is the position and presentation?" Radiographs taken in two planes, anteroposterior and lateral, make possible a complete orientation of the fetus in all cases. This is more reliable than information obtained from any other diagnostic method.

"What is the period of gestation?" Radiology can be relied on in many cases to give facts which are considerably more exact than those obtainable by clinical means.

"Is there disproportion between the size of the fetal skull and that of the maternal pelvis?" The exact size of the fetal skull and the pelvic measurements may be accurately ascertained, making for an important aid, but without a fuller knowledge of the uterine forces and the degree of skull-molding in labor, the application of these cephalometric and pelvimetric data is normally outside the province of the radiologist.

"Is the fetus dead?" One week following the death of the intra-uterine fetus the brain substance shrinks with a consequent falling in of the cranial vault, producing an overlapping of the cranial bones on the radiograph. This appearance, known as Spalding's sign, is reputed to be present frequently as early as four days after the death of the fetus. The radiological evidence of death if positive is reliable.

"Is there a multiple pregnancy or a fetal abnormality to account for hydramnios?" Radiographs are truly precise in answering this question. Anencephaly, spina bifida, and other abnormalities are not diagnosed by clinical examination but are often found by the radiologist.

"Is the pregnancy extrauterine?" X-ray diagnosis of extrauterine pregnancy is reliable if direct radiography be followed where necessary by the use of contrast media.

"Is there a placenta previa?" Two methods are used employing contrast media, one in the bladder and the other intra-uterine in the amniotic fluid. Both methods are in their infancy.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
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Sarcoma of the Optic Papilla. A. Bucalossi. Archives of Ophthalmology, June, 1936.

A man of forty-six was seen who had become aware of poor vision in the right eye three months before. The media were clear, and the tension was twenty-two (Schiotz). Vision was reduced to perception of light. The disk was seen to be covered by a mass that projected into the vitreous. The retina around this was edematous. During twenty days the mass increased in size, and the retina about it became detached. Sections of the enucleated eye showed a mixed cell sarcoma containing pigment, which extended four millimeters into the vitreous and involved the choroid on both sides of the disk. It pushed the lamina cribrosa back but had perforated it in only one small area; there a small strand of tumor tissue extended back a slight distance in the nerve. An origin from choroidal elements containing pigment which are often present in the normal disk is considered probable.

PEDIATRICS

By JOHN M. LEE, M.D.
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Artificial Fever Treatment of Chorea. Preliminary Report. Clarke H. Barnacle, M.D., Jack R. Ewalt, M.D., and Franklin G. Ebaugh, M.D., Denver. Jour. A.M.A., June 13, 1936.

Thirteen patients with chorea were treated in the Kettering hypertherm, an air-conditioned cabinet, as a means of inducing artificial fever. Fever sessions of two and one-half hours daily at temperature of from 105 to 106 degrees Fahrenheit (rectal) with strict rest between treatments materially shortened the attacks, the average attack lasting about nine days.

The average amount of fever administered was twenty-four hours at 105 to 106 degrees Fahrenheit (rectal). Cases with cardiac complications stood the treatments well. With this treatment there was absence of the undesirable effects observed in the use of typhoid vaccine intravenously, such as chills, vomiting, headache, extremely high fever, and marked prostration.

With the hypertherm the temperature is controllable, may be terminated instantly if necessary, and a specified dose may be given as desired. An adequate fluid intake by mouth is very important. To these patients from 2,500 to 4,000 cubic centimeters of six per cent saline solution was given during the two and one-half hour fever sessions.

Detailed reports of the thirteen cases treated are given. All were cured. These patients were

treated in the period March, 1935, to March, 1936. At the time of this report there had been no recurrences, though the period of observation had been short.

SURGERY—GENERAL AND ABDOMINAL

By **BATTLE MALONE, II, M.D.**
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Multiple Surgical Operations with Special Reference to Abdominal Adhesions. Damon B. Pfeiffer, M.D. Surg. Clinics of North America, April, 1936.

Abdominal adhesions may be divided into three groups: (1) congenital, (2) post-operative, (3) post-inflammatory. Formerly many operations were done upon this flimsy diagnosis, but this has been abandoned in our best surgical clinics except where there are definite indications of obstruction or X-ray evidence of embarrassment of function. Adhesions to the parietal peritoneum may at times become sensitive and give pain on active or passive motion and even cause reflex disturbances, especially where there is some small degree of partial herniation. A large majority of intervisceral or visceroparietal adhesions produce no disturbances of function nor of sensation, as is evident on opening abdomens that have been entered previously.

The intestines accommodate themselves remarkably to adhesions and, under the influence of gravity and of motion bodily or intestinal, adhesions like all fibrous tissues are elongated and give play to necessary movements. Only when there is actual stenosis of the intestine or torsion or interference of the blood supply by strangulation do adhesions per se justify surgical intervention. Unless there is a strand that is likely to ensnare intestinal coils in the future, adhesions encountered are usually best let alone.

Drainage material when used at operation should be placed along the parietal peritoneum to prevent encirclement by intestinal coils, which adds to the probability of agglutination and mechanical ileus. Another important point in the prevention of complications from adhesions in inflammatory cases is to limit or withhold fluids by mouth until there is evidence of satisfactory intestinal function. Drugs such as eserine or pituitrin, or chemical products which create the hyperperistalsis, should not be given. Jejunostomy or the use of Wangenstein suction will frequently relieve cases where the distention is due to ensnarement of coils of intestine in inflammatory exudate.

The author presents three cases to illustrate the significance of adhesions following operations. The importance of abdominal adhesions is not minimized, but he voices a protest against ready assignment of symptomatology to casual visceral attachments. An attempt should be made to prevent adhesions by careful handling and by proper drainage when it is necessary, but the only substance

introduced into the peritoneal cavity which the author believes is of any value is a solution of papain.

UROLOGY

By **TOM R. BARRY, M.D., F.A.C.S.**
By **G. A. WILLIAMSON, JR., M.D.**
Medical Building, Knoxville

Experience with Fever Therapy in the Treatment of Gonorrheal Urethritis. John K. Ormond. Jour. Urology, May, 1936.

The apparatus used is the air-conditioned Kettering hypertherm cabinet. It is operated by immersing the nude patient, from the neck down, in air at a temperature of 140 degrees to 160 degrees Fahrenheit and a humidity of thirty-five to forty per cent. It renders the heat-regulating mechanism of the patient useless, and his temperature rises.

Recent work has shown that ninety-nine per cent of gonococci have been destroyed at a temperature of 105.8 in from four to five hours. It required an exposure of eleven to twenty-three hours to destroy the other one per cent. This work has been repeated and corroborated by other men.

Although this series is too small to warrant definite and final conclusions, it is large enough to show tendencies and afford tentative opinions.

One patient, with gonorrheal urethritis and an acute epididymitis first seen twelve weeks after onset, was exposed to a temperature of 107.6 degrees Fahrenheit for six hours. His temperature dropped and the swelling improved. Another patient, seen seven months after urethral discharge started, and with acute epididymitis, received two treatments of five hours each, at 107 degrees Fahrenheit at three-day intervals. The pain left immediately and the swelling left gradually.

One group consisted of five boys between fourteen and sixteen years of age. The first case was seen three months after onset. His urethral discharge cleared after one treatment of five hours. A month later there was no discharge present nor did the prostatic secretion contain any pus. One boy, seen a month after onset, had gonorrheal urethritis and ophthalmitis. The ophthalmitis cleared after the first treatment, and the discharge after the fifth.

The next group consisted of ambulatory patients. A patient who had had painful joints and a painful heel for seven months, and a urethral discharge for six weeks, received one treatment at 107.6 degrees Fahrenheit for five hours. The painful joints cleared up rather promptly, and the urethral discharge disappeared. Another patient was given four treatments of five hours each at intervals of four to five days. The discharge increased for a day or so after the first three treatments, but disappeared entirely after the fourth treatment. The last patient described had pain in the right sternoclavicular joint, and gonococci were present

in the urethral smear. After receiving two treatments of five hours each four days apart, temperature at 107 degrees Fahrenheit, the pain and the urethral discharge disappeared.

In two out of fifteen cases in which the patients were ambulatory, complications arose during treatment, but complications did not develop while the patient was undergoing treatment in the hospital. The treatment had a favorable influence on the disease.

Arthritis and epididymitis yielded promptly to treatment. The older or chronic lesions seem to respond more promptly. Temperature as high as 107 degrees Fahrenheit has in most instances been well tolerated.

This method of treatment has certain drawbacks; it is somewhat of an ordeal, it is expensive, it necessitates loss of time from work, and it advertises the patient's disability. The treatment is not free from danger, since deaths have occurred in the course of treatment.

BOOK REVIEW

Allergy of the Nose and Paranasal Sinuses. French K. Hansel, St. Louis. 1936, 820 pages, illustrated. The C. V. Mosby Company.

This monograph, the stated object of which is "to familiarize the otolaryngologist with the clinical features of allergy as related to the field of otolaryngology, to review the various phases of

the subject itself, and to point out the frequent association of the nasal with the other manifestations, particularly asthma, gastrointestinal allergy, allergic skin diseases, and allergic headache," certainly seems to accomplish this goal admirably. As the author points out, it serves the purpose also of familiarizing the allergist and the pediatrician with the otolaryngologic phases of their practice.

The subject is developed first by a rather uncritical summary of the fundamental work on physiology, biochemistry, and bacteriology of the secretions, the cellular reactions of the tissues in allergy and in immunity, and the histopathology of allergy as related to the nose and paranasal sinuses. The subject of allergy in general is discussed with a certain completeness, followed by a review of the clinical aspects of allergy of the nose and paranasal sinuses. The other types of allergy frequently associated with nasal manifestations are each considered in turn. A special chapter is devoted to the otolaryngologic phases of allergy in children as related to pediatrics. Another chapter is a review of the subject of allergy as related to ophthalmology. Sixty-two pages are filled with details of treatment by both allergic and rhinologic methods. Four chapters are used for a fairly complete discussion of hay fever, and finally a group of case reports illustrating the clinical types of allergy of the nose and paranasal sinuses along with the principles of diagnosis and treatment are reviewed.

This monograph can certainly be recommended to the otolaryngologist, allergist, and pediatrician. The internist might also profit by a perusal of this book.—C.S.T.

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THE DIAGNOSIS AND OPERABILITY OF CARCINOMA OF THE STOMACH*

R. L. SANDERS, M.D., F.A.C.S., Memphis

CURIOSLY enough, the most serious lesion of the stomach, carcinoma, is the mildest in its onset and early course. Often the disease is well advanced before it can be recognized clinically. On the other hand, and paradoxically, benign ulcers are frequently manifested first by the dramatic symptoms of hemorrhage, severe pain, or perforation. It is unfortunate indeed that the onset of cancer in any part of the body, especially in the stomach, is not accompanied by symptoms of such severity as to permit its early recognition, even clinically. The disease, however, is so prevalent, so insidious, and so destructive, that its every aspect demands frequent discussion. Not one of the articles in a voluminous literature on the subject has been amiss insofar as it has served to bring to medical minds the necessity for being ever on the alert to detect malignant growths. A wide dissemination of information regarding cancer by research foundations, medical societies, and life insurance companies has brought about of late an awakened consciousness among the laity as well as the profession of the nature and danger of the disease, with the result that, during the past few years the mortality and, inferentially, the incidence of gastric carcinoma has shown some decrease.

The mortality rate of cancer in general

has increased during the past thirty-five years. The percentage of deaths per 100,000 population in 1900 was 63.0, whereas in 1933 it was 102.2. No doubt the actual incidence at the earlier date was much higher, and the apparent increase may be attributed largely to the better diagnostic methods in use in recent years, but the fact remains that an increase has occurred. It has been stated that there are three living persons with cancer for every one who dies from the disease. This being the case, approximately a half million people are so affected at this moment in the United States.

With the present decrease in the birth rate and the extension of the span of life, a larger number of people now live to the later decades. The Commission on Economic Security estimated that only four per cent of the population in 1900 were over sixty-five years of age. In 1930 the percentage had increased to 5.4. If the changing order continues to 1970, they estimate that ten per cent of the people will be sixty-five years old or over. Since cancer is regarded as a degenerative type of disease and occurs chiefly in persons beyond the age of forty, a further increase in its incidence may be expected unless something can be done whereby early diagnosis and treatment may check its progress.

Probably more people die from cancer of the stomach than of any other organ in the body. In the United States the number of

*Read before the Tennessee State Medical Association, Memphis, Tenn., April 14, 1936.

deaths annually from gastric carcinoma is approximately 35,000. Eusterman¹ estimates that the incidence reaches 38,000 each year. He states that ninety-five per cent of all gastric carcinomas occur in people between ages of forty and sixty-nine, the average age of the men being fifty-four and of the women fifty-three.

Diagnosis.—Tragedy lurks in the insidious, vague, and variable symptoms produced by early cancer of the stomach in the majority of cases. Practically all writers on the subject call special attention to the indefinite manifestations and lament the lack of a positive clinical syndrome. No age is exempt, but since it is more prevalent in persons of middle age or older, any noticeable change in the digestive function of a patient in the fourth or fifth decade of life must be looked upon with suspicion.

The symptoms differ according to the location of the lesion and the extent of disturbed motor mechanism of the stomach. A tumor at the pylorus will produce symptoms quite different from those of an obstructing lesion at the cardia. A carcinoma in the midportion, the silent area, may not be manifest until late in its course; distant metastases may occur before the patient is aware that anything has gone wrong. It is in this group that delay in diagnosis is most excusable. A small ulcerative growth near the pylorus may simulate benign ulcer in its symptoms. This type may even improve under medical treatment, thus deceiving the most alert clinician. Eventually, however, the characteristic distress after meals becomes more acute, other symptoms and signs are established, and the real nature of the lesion is discovered only when the growth is well advanced. It is not the purpose of this paper to discuss the relationship of ulcer to cancer, but one cannot overlook the fact that occasionally a long-standing history of ulcer is obtained from a patient who has recently noticed a change in the character of the complaint, and on roentgenologic study or exploration a definite cancer is found. In other cases, the patients have considered themselves well until the symptoms were ushered in by pyloric obstruc-

tion. Ascites and jaundice point to the diagnosis in still others.

A gradual downhill course, with slight anemia, loss of weight, strength and appetite, accompanied by a sense of fullness and distress in the stomach and bowels, and often an actual disgust for food, is the usual clinical picture. A diagnosis of pernicious anemia has been made in a few cases presenting this syndrome, and treatment with liver extract has been carried out until the roentgenologic examination revealed the true condition. Pain is seldom a symptom of early cancer; when present, it generally means that the disease has extended beyond the stomach and has involved adjacent organs. Nausea is not infrequently a feature, but vomiting is relatively rare. Occasionally, a small amount of blood may be raised, but copious hemorrhages are unusual. Only five to ten per cent of cancer patients vomit blood, whereas twenty-five to thirty per cent of benign ulcer patients have definite hematemesis. As a rule, occult blood is found in the stomach and bowel contents.

Although gastric analysis has some value in the diagnosis, it is more dependable as a prognostic procedure. The older textbooks state that free hydrochloric acid is usually absent and Oppler-Boas bacilli and lactic acid are present in the stomach contents. In recent years, this observation has changed. Eusterman states that fifty per cent of the resectable lesions and eighty per cent of the pathologically and roentgenologically verified carcinomatous ulcers show presence of free hydrochloric acid in the stomach. Hypochlorhydria is the rule, however, in a large percentage of cases. Studies made by Gray² of patients cured by gastric resection demonstrated that the rate of curability was definitely higher among those with achlorhydria than among those with hydrochloric acid, and apparently the higher the acid value, the less the prospect for cure.

The physical examination will reveal little of significance unless the disease has advanced to a stage of tumor formation and a palpable mass is present. When the lesion is located in the pyloric antrum or midportion of the stomach, the growth may

be easily felt, whereas if it is nearer the cardia it may be impalpable, even though well developed.

Roentgenologic examination is by far the most important of all diagnostic procedures. Competent roentgenologists are able to make a positive diagnosis in ninety per cent of these cases. Unlike other gastric lesions, cancer of the stomach usually produces a tumor of variable size. The roentgenogram will show a defect in the gastric shadow. Infiltrative growths cause a thickening of the adjacent stomach wall and prevent its expansion, and fungating tumors are clearly visible in the film. Retention, which is present in some degree in the majority, is significant, especially in the early stages of the disease. It must be borne in mind that when a filling defect can be demonstrated in the roentgenogram, the disease is already so advanced as to seriously damage the mucosa and muscular wall, if perchance it has not metastasized to remote foci.

The presence of a tumor is not necessarily a contraindication to operation. Lahey³ states that in twenty-eight per cent of his resectable cases the patients had a palpable mass. In forty-five per cent of his inoperable cases a mass was present. My experience coincides with the Lahey Clinic report. From the standpoint of operability, it is essential to correlate the signs and symptoms with the roentgenographic findings. For example, the clinician may find the patient in good physical condition and the tumor freely movable, although the roentgenologist will regard the stomach as inoperable. All questionable cases should be rechecked. When in doubt, the patient may be given belladonna to relax spasm and then reexamined. This procedure is particularly valuable when the lesion is small and near the pylorus.

Operability.—By careful clinical study and the use of recently developed and accurately perfected roentgenologic examinations, the diagnosis of cancer of the stomach has reached a high degree of perfection. Still, the operability of malignant lesions in this location remains very low. According to the experiences of Gatewood,¹ Balfour,⁵ St. John,⁶ and Lahey,³ the percentage of operable lesions ranges from

thirty to seventy per cent, including all curative and palliative measures. At the Mayo Clinic, about twenty-five per cent of gastric carcinomas are resectable when first examined. Balfour states that of the group of his patients in whom the growth was removed while the disease was confined within the stomach wall, fifty per cent are alive and well three years postoperatively. This is certainly a plea for early diagnosis and surgical treatment.

Operability in terms of resection has increased in recent years. In our present day, of all cases accepted for exploration by experienced surgeons, probably thirty-five per cent are amenable to resection. Certain conditions, however, render other cases inoperable at the first examination. Remote metastases, such as fixed glands in the left supraclavicular area, infiltration about the umbilicus, an enlarged, nodular liver, with ascites and jaundice, and a nodular mass on the rectal shelf, are contraindications. A large, palpable, fixed tumor of the stomach, particularly if situated to the left of the midline and extending beneath the costal margin, is seldom removable. A high lesion on the lesser curvature or about the cardia is not resectable at any stage. In the absence of all clinical manifestations of inoperability and a report from a competent roentgenologist of the finding of an intrinsic lesion of the stomach which produces a filling defect, the surgeon usually can accept the case as a prospect for resection, provided the proximal portion of the stomach is not extensively involved. The size of the growth is not the determining factor of resectability. It has long been known that a large tumor of the colloid or fungating, local type, is often easily removable and carries a good prognosis. On the other hand, the smaller infiltrating type of cancer is more serious because of the likelihood of metastasis or direct extension to neighboring structures. Many lesions of this type cannot be palpated, even in the late stages. If the nature of the growth and the condition of the patient justify resection, adequate preparation is essential. The operative mortality should not exceed ten per cent.

Hunt⁷ recently summarized the results of resection. He stated that there is a gradual tendency toward higher operability and a definite reduction of the mortality rate from partial gastrectomy for carcinoma. He quotes Persson, of Stockholm, who states that nineteen per cent of his patients are alive and well five years or more after operation. St. John⁶ has twenty-one per cent, and Gatewood⁴ thirty-nine per cent alive five years postoperatively. Balfour⁵ reviewed the cases of 128 patients who lived ten years or more following resection and found that they represented about twenty per cent of those for whom partial gastrectomy could be done.

Every patient who complains of stomach trouble, which is not otherwise explained, should have the benefit of a careful fluoroscopic study by a competent roentgenologist. The cost may seem high, but the money will be well spent, and in the long run more early diagnoses will be made and more lives saved.



Fig. 1. Man, aged 33. History of gastric distress and epigastric pain. Physical examination revealed a tender mass slightly to right of spine. The roentgenogram shows a deformity of the antrum with marked displacement of the duodenum. At exploration, the mass proved to be a malignant retroperitoneal growth involving the head of the pancreas. Stomach negative.



Fig. 2-A. Woman, aged 47. History of intermittent gastric distress beginning eighteen months earlier. The roentgenogram shows a persistent deformity of the antrum and lesser curvature, suspiciously like that of a prepyloric lesion. At operation it proved to be a benign ulcer.

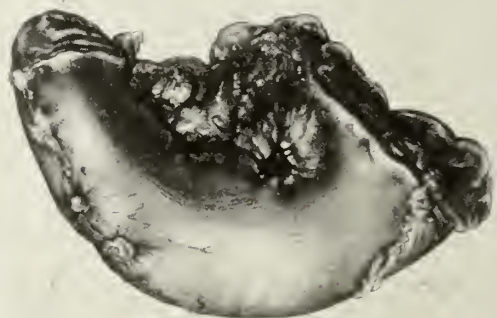


Fig. 2-B. Same as 2-A. Artist's drawing of the stomach after resection, showing the small ulcer on the lesser curvature, the crater the size of a ten-cent piece. Pathologic diagnosis was benign gastric ulcer. Patient living and well.



Fig. 3-A. Woman, aged 56. History of digestive disturbance for eleven months—epigastric pain, nausea and vomiting, loss of weight. The roentgenogram shows a persistent deformity of the pyloric antrum with an area of rarefaction near the pylorus. Roentgenographic diagnosis was carcinoma of the stomach, operable.



Fig. 3-C. Same as 3-A and 3-B. Roentgenogram showing the stomach three months after partial gastrectomy and Polya type of anastomosis. Good functional result. Patient living and well four years postoperatively.



Fig. 3-B. Same as 3-A. Artist's drawing of the specimen after partial gastrectomy. The crater of the ulcer was larger than a twenty-five cent piece, situated on the lesser curvature and posterior wall about one inch prepyloric. Pathologic diagnosis was carcinoma.



Fig. 4-A. Woman, aged 53. History of gastric disturbance and partial pyloric obstruction. Roentgenogram shows deformity of pyloric antrum. Diagnosis of prepyloric lesion, probably carcinoma; resectable. At operation the growth proved to be a large malignant ulcer near the pylorus on the lesser curvature.



Fig. 4-B. Same as 4-A. Artist's drawing of the specimen after partial gastrectomy, showing a large carcinomatous ulcer which had not perforated.



Fig. 5-A. Woman, aged 50. History of gastric disturbance for one year, gradual loss in weight and recent partial pyloric obstruction. The roentgenogram shows a filling defect involving the entire pyloric antrum. Diagnosis: carcinoma of the stomach; operability questionable.



Fig. 4-C. Same as 4-A and 4-B. Roentgenogram of the stomach three months after operation. About one-half the stomach resected and the Polyga type of anastomosis made, with a good functional result. Patient living and well.



Fig. 5-B. Same as 5-A. Roentgenogram of the stomach five months postoperatively. Partial gastrectomy was done and Polyga type of anastomosis

made. Good functional result. Patient died twenty months later with recurrence in the liver.



Fig. 6-A. Man, aged 58. History of indefinite digestive symptoms for twenty years; obstruction for two months. Roentgenogram shows filling defect involving the pyloric antrum, with considerable obstruction. Roentgenographic diagnosis was carcinoma of the stomach, resectable.



Fig. 6-B. Same as 6-A. Roentgenogram of the

stomach four months after operation. Partial gastrectomy done and Polya type of anastomosis used. Good functional result. Pathologic report of specimen showed it to be carcinoma. Patient died twenty-three months postoperatively from recurrence in liver.



Fig. 7. Man, aged 54. History of gastric distress for one year; recent loss of weight and appetite, and inability to retain sufficient nourishment. Examination revealed a large fixed mass to left of midline. Roentgenographic diagnosis was large filling defect involving the pars pylorus and pars media; inoperable carcinoma of the stomach. Patient was not operated upon. He gradually declined and died four months later from extensive carcinoma with metastases.

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DISCUSSION

DR. JOHN L. JELKS (Memphis): I have been very much impressed with Dr. Sanders' talk on carcinoma, but the thing that impressed me most was that part about early diagnosis. Cancer in this country is being neglected by the medical profession because the medical profession is derelict; you cannot answer it any other way.

Just after having observed a rectal excision by Sir Gordon Watson in London, I said to him, "Sir Gordon, I get two reactions." He asked me what they were. "First," I said, "you either have better doctors in your country or you who operate for cancer have prevailed upon your doctors to make earlier examinations of your patients, because seventy-five per cent of all gastrointestinal cancers that I have seen were hopeless when they presented themselves to a surgeon."

The doctor has given you this fact I think with the greatest emphasis.

I was, in the beginning, a pessimist, and I was

admonished by some of the fellows of the American Proctologic Society not to be that way to such a degree because, one man said, "Somebody else is listening to you." Then I turned around and became an optimist. I removed, for instance, a gastric cancer that looked like it was certainly operable. About six or seven months after that I presented that woman and her cancer in a jar at the local medical society, and I thought if there ever was a cancer that ought to get well it would. But within six or eight months after that time she died of cancer. So it is with rectal cancer, and I have again become a pessimist and I have almost made up my mind that when the medical profession will persist in not making or having made proper examinations in possible neoplasms, because there are certainly elegant symptoms presenting for them either to make a diagnosis or get somebody else to do it, I will send the patient back and refuse to operate. Now, I mean business. I did that three weeks ago and the patient was operated on out here at the Baptist Hospital, but thank God I have got the nerve to say no when I know that I am not going to do that patient any good by operating.

Now, gentlemen, when a patient has a train of gastric symptoms or loss of weight or a change of stomach habits, and the same in rectal habits, and that patient presents himself or herself to you, it is your professional duty, and if you are a Christian, by Jove, it becomes your Christian duty, either to make a diagnosis, affirmative or negative, in that case, or get somebody else to do it.

DR. R. L. SANDERS (closing): Mr. Chairman, I have nothing further to say in closing. I appreciate the remarks of Dr. Jelks. I would like, however, to reemphasize that carcinoma of the stomach is a very prevalent disease, is ever on the increase, and the profession should bear it in mind when patients are seen who complain of gastric symptoms indefinite in nature and more or less recent in occurrence. It is our duty to investigate all such cases very carefully. A thorough roentgenologic examination is particularly important.

GENERAL PARESIS, WITH REPORT OF A CASE*

K. S. HOWLETT, M.D., and W. F. ROTH, JR., M.D., Franklin

PARESIS, formerly called general paralysis of the insane, is a meningo-encephalitis due to *spirocheta pallida*, and with pathological changes, such as exudation, thickening of the dura, as would be expected in a chronic inflammation of the brain and its coverings. Untreated, it almost invariably develops gradual dementia, paralysis, and terminates in death.

First clearly described in 1822, it was then named "paralytic insanity" or, in order to bring out the pathology, "chronic arachnitis." It was not for a long time linked up with syphilis. Gradually, however, it was observed that all such cases gave a previous history of syphilis, and in the latter part of the last century it was generally ascribed to that cause.

However, as mercury and the iodides, the only potent antisypilitic remedies of this period, exerted no favorable influence in either *tabes dorsalis* or paresis, Fournier suggested "parasymphilis," and attributed these two conditions to a toxin or antitoxin left in the system by the syphilis rather than to the spirochete itself. I am always skeptical about "para" anything—paratyphoid, parasymphilis, etc. It is usually, if not always, a mild infection of the genuine, specific organism of the disease under consideration.

Following the discovery of the Wassermann test in 1906, it was soon demonstrated that in cases of *tabes* or paresis the spinal fluid showed positive test in 100 per cent of cases, and a perfected technique enabled investigators to find the spirochetes in large numbers in all paretic cases, in the membranes and in the substance of the brain, attached to the walls of the blood vessels, etc.

Incidence.—Paresis occurs in about three per cent of persons infected with syphilis. It occurs about five times oftener in males than females. The only explanation of this is the protection given the female by preg-

nancy, which is not really a satisfactory explanation.

The incidence seems to be more frequent in those inadequately or partially treated than in those with no treatment at all. This is accounted for on the theory that in the untreated cases nature develops an immunity which is neutralized by inadequate or partial treatment. Hence, the importance of more prolonged and thorough treatment than the majority of syphilitics get even in this day.

Formerly, before the days of arsphenamine, we were taught that two years of systematic treatment with mercury and iodides practically eradicated syphilis from the system. In the early years of my practice, the 80's and 90's, the results of this practice seemed entirely satisfactory to general practitioners. It was only later when we were confronted with *tabes*, general paralysis of the insane, and aortic heart lesions in former syphilitics that we were convinced of the inadequacy of the two-year treatment. Now we try to keep our luetic patients under observation for a minimum of three years, and teach them that more than one negative Wassermann must be obtained before dismissing them and before advising marriage. The study of the case I am to present has convinced me that probably every case should have the spine punctured and the spinal fluid subjected to Wassermann test before final dismissal.

Paresis develops in from five to forty years after the onset of syphilis, the average being twelve years. It is noticeable that in our case it came on after twelve years. In fact, in almost every feature this case was a typical textbook case, even to having the euphoria, which is a classical mental symptom. This euphoria may, and often does, reach the extent of an abnormally exaggerated ego, a feeling of possessing wealth, power, etc., leading possibly to delusion formation. However, we must remember that almost any form of mental disturbance may accompany paresis. The

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classical symptom of euphoria is seen in a relatively small proportion of cases (about twenty per cent) nowadays. Therefore, confronted with the rather sudden onset of mental symptoms in a patient in middle life (and especially if the patient be a male), one should always think of the possibility of paresis.

REPORT OF CASE

This patient, age forty-two, white, male, married, contracted lues in 1923, before marriage. When first seen by me he had a typical chancre of the genitals and also had patches in throat, both of which disappeared promptly under neoarsphenamine and local treatment. I gave him eight doses of neoarsphenamine intravenously at one week intervals. He then went to Arkansas for several weeks and, according to his report, he took four "shots" from a physician while in Arkansas. I find that some months after this I gave him twelve shots of bismuth intramuscularly, that before the use of the bismuth the Wassermann was positive, and one month after the bismuth it was negative. No further blood tests were made.

I have no further record, but as I remember it, he continued under routine treatment with mercury and iodides at somewhat irregular intervals for two years or more. In 1925, two years after the onset, he had a most severe attack of supra-orbital neuralgia, which was quite stubborn and slow to yield to treatment. Soon after this he married. His wife states that about a year or more after marriage he had what she calls an abscess, which remained sore for a long time. Neither he nor I can recall this, and I am at a loss to know just what the nature of this sore was. This man was a quiet, modest man, rather timid, and retiring in his manner. His mother and wife state that he was always good and kind, and his mother was especially grateful because he had always looked after and provided for her and had been at all times such a considerate son. He was honest, thrifty, looked after his obligations and was careful not to incur any obligations he could not care for. He was prompt in looking after his work and busi-

ness affairs and in every way reliable. He owned and operated a truck, and his business was to haul farm produce to market and dispose of it on a commission basis, or else to purchase the produce outright and dispose of it as best he could on the market. His wife states that he was always meticulously careful to figure up his own commission, to put aside the other fellow's share, and to settle promptly.

In July or August of 1935, twelve years from the onset of his disease, his wife came to me in great distress. She stated that he had been led astray by some of his companions and was drinking beer excessively. That he was irritable and nervous at home, was frequently away from home unaccountably, had run in debt, would take hay and other things off in his truck, sell them, and fail to make proper accounting for the proceeds, and seemed not to know what became of the money. In addition to this he would go to gatherings of the neighbors and become somewhat hilarious, in marked contrast to his former modest, quiet manner. She requested me to get him in the office, examine and talk with him, as she was anxious about his mental attitude toward things and was sure something was wrong with his mind unless drink was causing it all.

Soon after this, I had a long talk with him in the office and subjected him to careful questioning and thorough physical examination. He insisted that he was all right and there was nothing the matter with him. He was evidently abnormally elated, stated that he was making \$150 or more a month with his truck and could easily take care of his debts. Said he felt extraordinarily well, though he acknowledged he was "short of breath" at times upon exertion and could not do hard work without becoming unusually tired. He was nervous and tremulous. Knowing his former medical and personal history, I was suspicious of paresis and assured his wife that it was something even more serious than beer.

I asked Dr. Roth to see him, which he did in my office on September 20 and made a neuropsychiatric examination. The important neurological findings were as fol-

lows: Left pupil very slightly larger than the right and more active in its response to light; slight fine tremor of the tongue; occasional slight twitching around the mouth; knee jerk hyperactive on both sides; ankle jerks lively, the right more active than the left; very slight yet definite impairment of spontaneous speech in the form of frequent halting and hesitation; no definite slurring except on one test phase ("Methodist Episcopal"). The outstanding findings in the psychological sphere were euphoria in the state of admittedly impaired physical health; a tendency to paint the financial picture more rosily than the facts warranted; evidence of poor judgment shown by his accounts of recent actions. No searching tests were made of other intellectual faculties, because the findings already obtained were sufficient to indicate the diagnosis. However, although careful observation in the course of ordinary conversation showed no evidence of memory defect, we can be sure that careful examination would have shown some impairment of the patient's ability to form and retain new associations.

Later on in the day we visited the patient at his home. Lumbar puncture was done and about twenty cc. of clear, colorless spinal fluid removed. Laboratory examination of this fluid gave the following findings typical of paresis: forty cells/mm.³; positive (Pandy) test for globulin; colloidal curve 5555543110; Wassermann reaction positive with both antigens and in all dilutions.

The clinical diagnosis having thus been confirmed, the next step was to start treatment as quickly as possible. Arrangements were made for the patient to enter Vanderbilt Hospital for malarial therapy. He was admitted there on September 30. The history given by the patient and supplemented by his wife agreed essentially with that given above, except that there was a confusion of the date of the first infection and treatment ("twenty years ago"). A history of loss of weight—sixteen pounds in the preceding four months—was given; also a history of having had whooping cough, mumps with orchitis, syphilis, measles, influenza, and tonsilitis. Other in-

fectious diseases, including gonorrhea, were denied. The family history given was irrelevant. The blood Wassermann and Kahn reactions were positive.

Malarial blood was obtained from a Cincinnati clinic and the patient inoculated with it (five cc. intravenously, twelve cc. intramuscularly) on October 4. Forty-eight hours following the inoculation he had a temperature rise to 100.8 degrees, and on the following day (October 7) his temperature went to 103 degrees. From then on his malaria ran a typical course for two weeks with temperature peaks on alternate days. During the third week the malarial infection became atypical, with gradual diminishing temperature peaks and minor temperature rises on the days in between. On October 30, after the malaria seemed to have burned itself out, daily dosage of quinine was started.

An interesting unforeseen complication occurred in the course of this treatment. On October 6, the day the patient's temperature first rose above 100 degrees, there appeared a heavy purulent urethral discharge, loaded with gonococci. Daily injections of acriflavine were instituted. Subsequently a periurethral abscess developed. Under appropriate treatment this ruptured and drained and then subsided.

Upon learning of this, I got in touch with his wife and found that she too was infected with gonorrhea, and she was immediately put on vigorous treatment. She had a rather rocky time, developed rheumatism, etc., but steadily improved under treatment, and this improvement has continued unabated until the present time.

On November 3, approximately six weeks after the first lumbar puncture and four weeks after the start of the malaria, the patient's spinal fluid was examined again. It showed considerable improvement in respect to cells (thirteen) and colloidal curve (5432100000), but the Wassermann reaction—as one would expect at such an early date—remained unchanged. The blood Wassermann reaction remained positive throughout the patient's stay in the hospital.

He was discharged from the hospital on November 5, with the recommendation that

antiluetic treatment be continued in the form of several courses of bismuth and neoarsphenamine (for systemic syphilis); appropriate follow-up of the genitourinary condition and the malaria (quinine, iron-ammonium citrate) also to be looked after. We asked that the outpatient department of the hospital carry out this treatment, and suggested that a few courses of tryparsamide be included to reinforce the effect of the malaria. This additional treatment was thought necessary because it is known that neoarsphenamine has little or no effect on the parenchymatous lesions of paresis, and because best results in the treatment of paresis have been obtained by combining tryparsamide with fever therapy.

Incidentally, I might remark that the treatment of malaria inoculation or other forms of artificially induced fever is receiving more and more attention at this time. In the April 4 issue of the J.A.M.A. a review is given of a book by Hinsie and Blalock of the New York Psychiatric Institute, entitled "Electropyræxia in General Paralysis." Of the 105 cases whose treatment is described, fifty-one were treated by thermotherapy only; twenty-seven were given the same amount of fever therapy and six months later received either a course of malaria inoculation or of tryparsamide. The third group of twenty-seven were given a similar course of pyretotherapy followed immediately by one or more courses of tryparsamide and mercuric salicylate in oil. The clinical results were distinctly better in the last group, which showed a remission of thirty-seven per cent as against 21.7 per cent in the other two groups. This résumé is taken from the review in the journal, not from the monograph itself.

Both the patient and the clinic have co-operated admirably in carrying out this plan. The patient attends clinic regularly, faithfully keeping every appointment. Since his discharge from the hospital, he has received thirteen injections of bismuth and is now nearly through with the second course of neoarsphenamine. When this has been finished, he will be started on tryparsamide.

Coincident with this intensive treatment

there has been slight, but definite, serological improvement. The blood Wassermann taken on March 3 was negative with the cholesterinized antigen (positive with the alcoholic antigen; Kahn test still positive). The spinal fluid was examined again on April 3, just six months after the start of the malaria treatment; the findings were as follows: four cells/mm.³; positive Pandy (two plus); Wassermann positive in all dilutions to two-tenths cc., colloidal curve 54322210000.

Along with the serological improvement, the patient has shown unmistakable clinical improvement. He continues to come to me as the one who is directing his treatment. His abnormal euphoria and other mental symptoms have disappeared and the speech defect is no longer perceptible. He has returned to his former status as an economically efficient, useful citizen, has resumed his trucking business, and is reestablishing his former reputation for reliable and efficient service. He is again managing his personal affairs on a sound basis. In every way we find his progress most gratifying and we feel justified in expecting the maintenance of this improvement. If our hopes are realized, the breakup of a home will have been averted, and the patient will continue to support the family group instead of leaving his wife and mother to the care of others and himself going to the state hospital as a hopeless human wreck and a chronic burden to the taxpayers of his community.

DISCUSSION

DR. C. C. TURNER (Memphis): Drs. Howlett and Roth have presented to you a genuine case of paresis, and they illustrate again the value of hyperthermia, particularly that produced by malaria, when used early in this disease, as the best type of specific therapy.

It is not wise, however, to look upon any case of paresis as "typical" or "classical" in its symptomatology and course. The histopathological studies of the brain in this disease reveal that a diffuse attack not only upon the cortex of the brain and its meningeal envelopes, but also the subcortical structures, the midbasal ganglia and thalamic region, the cerebellum and the brain stem, but the spirochete and its associated vascular and glial reactions, produces many atypical, bizarre, and unrelated syndromes. Not infrequently paresis may set in as an acute confusion or agi-

tated dementia following head trauma. These cases are of medicolegal interest in that the true etiological factor is often mistaken for a post-traumatic psychosis.

Paresis may also set in acutely with some such cerebral somatic episode as a generalized epileptiform seizure, a localized Jacksonian seizure in which muscles of the head and arms especially are in a convulsive state, or by an apoplectiform seizure. The latter is usually transitory and may be followed by short aphasic and paretic sequelae.

Probably the most usual onset of paresis is the slow insidious onset during which the quick fatigability, nervous tremulousness, insomnia, mental lassitude, and general change of personality suggest neurasthenia. These symptoms, with vague hypochondriacal moods, lead to a suspicion of psychoneurosis. The tremulousness, ataxia, increase in tendon reflexes, and dysarthria frequently lead to a diagnosis of multiple sclerosis.

Not a few cases present a masked facies, slowing of all movement, and a marked emotional instability of the pseudo-Parkinsonian type. When the disease appears in the decades of later life, with memory defect, disorientation, tremors, and irascibility, it suggests senile dementia. It is quite evident then that certain somatic signs should be sought and a rather well-systematized neurological investigation should be resorted to for a reliable diagnosis of this disease.

The Argyll Robertson pupil appears so frequently that it is nearly pathognomonic of the condition. A negative blood Wassermann or Kahn does not exclude paresis, for in late syphilis negative blood serology is not unusual and is really sometimes a positive sign of this disease.

Again is stressed the value of lumbar puncture as a routine procedure in every neurological study, and no neurological investigation should be considered complete without the procedure of lumbar puncture and a routine spinal fluid examination. In paresis we frequently have to rely on the spinal fluid alone for a diagnosis.

As to the treatment of this condition, I agree with Drs. Howlett and Roth that malaria therapy is the procedure of choice among the hyperthermias. Personally I have had little experience with the efficacy of the machine-produced or electrically-produced fever. There is something about the zoologic antagonism between the spirochete and the plasmodium of malaria that enters into consideration of the efficacy of malarial treatment aside from the production of hyperthermia.

DR. G. MADISON ROBERTS (Chattanooga): I want to stress only one point that was brought out by Dr. Howlett, and that was that in paresis, as in most other forms of neurosyphilis, you will find that the greatest single cause of this condition is inadequate early treatment. The very fact that the female suffers less from neurosyphilis than the male shows that the lack of adequate early treatment is the one and greatest cause of

late neurosyphilis. You recall in your practice that the average patient with the initial lesion, if he is a male, will come in, take a little treatment, and quit. I do not mean to say the average patient will quit, but I do say that the male is the one that is most likely to quit after taking a few treatments. While the female as a general proposition does not realize that she has anything wrong with her, she will come in with a positive Wassermann probably the first time, and knowing that she has syphilis and that there is no doubt about it, she will continue the treatment and get early adequate treatment.

That is one of the most important points in the paper in my opinion. I appreciate this paper and think it very timely.

DR. W. S. FARMER (Nashville): I think we are to be congratulated on having a general practitioner who has practiced for over half a century give us such an excellent paper on paresis. I arise only to emphasize a few of the points.

Anyone who gives a history of syphilis I think should also have a spinal puncture.

He spoke of the time as from five to forty years. My observation has been it is around fifteen years, so there is nothing to quarrel about as to that. The oldest case that I ever had was twenty-eight years after the infection.

I want to speak of the remissions. As you know, syphilis is a simulator, it is a mockingbird of many things. Some come in the euphoric type, some in the depressed type, some in the agitated type, others in the chronic deteriorating type. A small per cent of the type that Dr. Howlett spoke of, the euphoric type, will have a remission under any kind of treatment; occasionally some will have a remission without any treatment. How do I know that is a fact? During the years 1916, 1917, and part of 1918, when many of you doctors were in the World War, I had only one physician and myself at the Central Hospital, and we were not prepared to do the serological examinations, and there was no one in the city just then who was available, so we had many cases come in that we diagnosed the maniacal type of manic-depressive insanity. They would stay a few weeks, get better, get a remission, and go home, apparently restored. They would come back with the same symptoms. By that time we were doing Wassermanns and spinal fluids almost as a routine, and we found that they had syphilis of the nervous system. That is what they had when they were there first.

The doctor mentioned opening an abscess. It is fortunate for a general paretic, especially in the early stages, to have an abscess. I had a man come in with empyema (he also was paretic), and his spinal fluid was positive. He had the mental symptoms. We did a rib resection, put in a tube, and the wound drained for several months, and he began to clear up. He got in a state of remission, and we discharged him. In looking over the literature, I found that an English psychiatrist

said that frequently in cases of paresis an abscess would materially assist in the treatment.

I was delighted to hear the doctor's paper, and I think he should be congratulated.

DR. W. H. WITT (Nashville): I wish to make a quotation from the paper which to this audience is worth more than everything else the doctor said or that has been said by anybody else. *"Therefore, confronted with the rather sudden onset of mental symptoms in a patient in middle life (and especially if the patient be a male), one should always think of the possibility of paresis."*

DR. K. S. HOWLETT (closing): My reason for wishing to report this case to the society is that in all the years I have been a member of the State Medical Association I do not recall ever having heard the subject of general paresis discussed. Second, I am very much convinced, and have been for a long time, that practically all cases of syphilis in general practice are inadequately treated. There are many reasons for this; the chief one perhaps is that the patient, when the lesions that he can see and suffers from disappear, and his skin is clean and he feels well, finds it awfully hard to go back and pay for treatment.

For that reason it strikes me that this subject of the adequate treatment of syphilis is perhaps one for the general health authorities to consider seriously.

Just one point with regard to this man's habits, which I did not bring out in the paper. When he came to me, he had moved out of the modest home in which he lived, and had rented a more expensive one. He had put in a telephone, which he had been able to do without before. He had put in an electric refrigerator, on the installment plan, of course, and, as I stated, had gone in debt that seemed an enormous amount to his wife, more than two hundred dollars. As he improved, he gave up this more expensive residence, moved into a very much more modest one, gave up the telephone, sent back the things he had bought on the installment plan, and returned to his normal state of living.

The question has been asked whether or not the improvement continued. You notice that the paper was brought up to date. A careful examination convinces me, as it does Dr. Roth, that his condition at this time seems absolutely normal. That is something that has never occurred in any other case of general paresis that it has been my privilege to see.

PHYSICAL THERAPY IN THE CHRONIC RHEUMATIC DISEASES*

JOHN S. COULTER, M.D.**

CHRONIC RHEUMATISM or chronic arthritis is not a disease of certain joints, but rather a systemic illness in which there may be disturbances of the circulation, general metabolism, and gastrointestinal system. It includes the syndromes of nerve, muscle, and joint affections called neuritis, myositis, fascitis, or arthritis according to the parts affected. The object of this paper is to illustrate certain important principles of the use of physical agents as adjuncts in the treatment of this disease, which causes so much suffering and economic loss to the person affected.

Physical agents should only be used as adjuncts to other forms of treatment. Under direct observation by the capillary microscope, the capillaries of patients suffering from chronic arthritis show a markedly diminished peripheral blood flow. The main therapeutic value of the physical agents used in treatment of this disease is their ability to increase blood flow.

Physical agents should be prescribed definitely by the physician. They should be used by the physician in his office or in the hospital, but since the purpose is to increase circulation, it seems definitely indicated that some of these agents should be applied at frequent intervals during the day. In our clinic the patient, the nurse, or some member of the family is instructed in the use of physical therapy in the hospital room or the home. If, in the case of ambulatory patients, the physician will supplement office treatment with home treatment, he can secure for these patients the same result as would be achieved by hospitalization, re-

sulting in a considerable reduction in the cost of medical care for the patient.

HEAT

Heat, applied systemically and locally, has its most extensive and varied application in the treatment of chronic arthritis. Heat is applied locally over an arthritic joint to increase the local circulation. It has been shown that the quantity and quality of this heat must be prescribed by the physician.

The metabolism of the tissue cells is affected by the temperature of the tissues. The normal exchange between the blood and the tissues in the capillaries is such that the arterial end of the capillary contains ninety-five per cent oxygen and the venous end seventy per cent. This saturation of oxygen depends on the rate of exchange between the tissue cells and the blood flowing through the capillaries. When heat is applied so that the temperature is moderately increased to 102 degrees Fahrenheit, the rate of blood flow through the capillaries is increased, tissue metabolism is accelerated, and the rate of exchange between the blood and the tissues is increased so that the blood entering the vein contains only sixty per cent of oxygen.

Above 102 degrees Fahrenheit, the rate of flow is so rapid that the metabolism of the tissue cells is decreased so that the blood entering the vein stimulates arterial blood and contains ninety-one per cent of its saturated value of oxygen.

These facts are clinically important. In a case of chronic arthritis of the ankle with a circulatory disturbance of the same leg which caused an interference with normal tissue metabolism, the patient was directed to put his leg in an extremely hot bath for twenty minutes. This caused a great increase in his pain that lasted for hours after each bath. With heat applied by an electric

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**Physical Therapy Department, Northwestern University Medical School, New Orleans Parish Medical Meeting, March 23, 1936.

lamp baker so that the temperature at the ankle was ninety-eight degrees Fahrenheit the pain decreased.

The kind of heat prescribed must be determined from a consideration of the penetration desired. In the local use of radiant energy it has been shown that with radiation from an incandescent lamp, using maximum skin tolerance as a gauge of dosage, the subdermal temperature at a depth of five-tenths centimeter rose to 47.7 centigrade, while with infra-red radiation from an infra-red generator at the same depth the temperature attained was 41.7 centigrade.

Another commonly used method for applying local heat is by medical diathermy. It is believed that short-wave medical diathermy is the most convenient method for its application. At Northwestern University Medical School, the temperature of the skin, of the subcutaneous tissue, and of the quadriceps extensor muscle in thirty-five human subjects was measured by a thermocouple in conjunction with a potentiometer before and after twenty-minute clinical applications of short-wave medical diathermy. In these tests it was found that the electromagnetic field, or electromagnetic induction, was the most effective in its ability to heat the deep tissues of the human thigh.

If medical diathermy is used in chronic arthritis, it should be used for a short period and of low intensity for the first few doses, for at times medical diathermy in arthritis causes an aggravation of the local symptoms. This usually happens in cases with active foci infection. It has been observed to be of benefit from a clinical viewpoint so often that we always give it a trial. We use short-wave medical diathermy in the form of electromagnetic induction daily or every other day for twenty-minute periods at an intensity determined by the patient's tolerance. The first doses are always half time and half intensity, and some form of heat is applied at home two to four times a day.

HYPERPYREXIA BY PHYSICAL AGENTS

Another method for the general application of heat is the production of fever by physical agents. In work done at Northwestern University it was found that the maximum circulatory increase as determined by the Johnson platysmograph was at 104 degrees Fahrenheit. We believe that the benefit attained by hyperpyrexia in chronic arthritis is from the increase in circulation. We, therefore, give these patients a fever curve of 104 degrees Fahrenheit from four to eight hours. This fever is given once a week for four to six times. The best results are in selected cases of chronic infectious arthritis.

IONIZATION

Another method of increasing the local circulation of an arthritic joint is by ionization with mecholyl. The affected joint is wrapped with a piece of special asbestos paper saturated in one-fifth of one per cent solution of mecholyl. This is wrapped with a thin metal strip electrode one-half inch wide and long enough to encircle the joint four to eight times. This metal electrode is connected distally with the positive pole of a galvanic generator. The negative electrode should be large, at least twelve by fourteen. The current used is between twenty and thirty M. A. for twenty to thirty minutes. The types suitable are those with marked circulatory disturbances—cold, clammy skin. About forty per cent of these cases are helped in from three to nine months. It is contraindicated in cases with organic heart conditions.

In addition to the local heat, the application of heat systemically is of value for the increased circulation and metabolism induced. These effects are increased if following the general "bake" a Scotch douche is given.

HYDROTHERAPY

In the use of water in the treatment of arthritis, the Scotch douche or cold shower after a bake furnishes a "metabolic and circulatory whip" if properly used. Where

the proper apparatus is not available, a sheet bath is a valuable substitute. For home use again the patient should be given definite instruction for its use. For the generalized application of heat the hot bath may also be used at home.

For local applications of heat by water a whirlpool bath is often valuable. The whirling of the water under pressure and the air intake enables the water temperature to be increased to 115 degrees or 120 degrees Fahrenheit. The rapidly moving water and air bubbles also give an efficient form of gentle massage. Joint motion that could not otherwise be tolerated may be given while in the bath.

Contrast baths using hot water followed by cold are not used, as it has been noted by direct observation of the capillaries through the microscope that the capillary circulation is not increased by contrast baths as efficiently as with hot baths.

MASSAGE

The effect of massage in arthritis is to open vascular channels and increase the circulation. If this is so and there is a deficient circulation to these joints, it must follow that massage must be given at frequent intervals. For this reason we have our patients bring in some interested member of the family for instruction in the use of massage at home, as it is useless to give massage three times a week and no more. Every physician should be able to prescribe massage as he would drugs, for it is dangerous to turn a patient with arthritis over to a technician with only directions to give massage. Heavy massage over an arthritic joint may cause a marked local reaction. An arthritic case should have gentle kneading massage above and below the affected joint and no massage over an acute joint. When the joint becomes subacute, superficial stroking massage may be started over the joint in addition to the kneading massage above and below the joint. This should be preceded by at least fifteen minutes of heat. Mas-

sage should be given for about ten minutes twice daily. The details of the technic of massage are given in the *Handbook of Physical Therapy*, American Medical Association.

Associated with massage, electrical muscle stimulation of the graduated contraction variety is of great use. In graduated muscle contractions produced by electrical stimulation the good results are due to the direct stimulations of the muscles causing physiological contractions with all the natural changes dependent on such contractions and the mechanical effects due to the direct movement of the joint.

EXERCISE

This program is always started with a careful explanation of and a prescription for body mechanic exercises, because it is believed that a most important part of the treatment is to remove mechanical handicaps and to maintain the best possible body mechanics. It has been noted that atrophic arthritis is much more common in the young and thin person with weak muscles, narrowed thoracic cages, with poor diaphragmatic excursion, with sagged abdominal viscera, and with the weight-bearing lines of their joints out of line. They are fatigued. Their posture (body mechanics) is poor. If these conditions can be changed by postural rest periods, body mechanic exercises, and temporary supports, more room is provided in the thorax for heart and lung action, the diaphragmatic pump is set working again on the abdominal veins, the sagging of the abdominal viscera is relieved, and the normal weight-bearing lines are restored to the painful joints. This causes a higher circulatory coefficient, more nearly normal alimentation, and less fatigue. Hence, the defense mechanisms of the body are given a better chance to overcome whatever bacterial or chemical toxins are being elaborated, which presumably are responsible for the pain in the joints.

In hypertrophic arthritis, the same

principles of improving faulty body mechanics obtain. With its older age incidence, the remodeling of the body is harder, but, fortunately, there is usually less remodeling to be done.

The time taken in explanation of the objects of this program is necessary as the patient's cooperation is absolutely essential. The patient and some interested member of the family are instructed in the use of the body mechanic exercises. The instructions are on mimeographed sheets. These exercises are based on the development of a firm, flat lower abdomen. The position desired is standing so that the weight falls well forward on the outer borders of the feet, the lower abdomen pulled in and up, the back flat, the head up and chin in. The body should be stretched tall, without being rigid, the shoulders and chest will then fall into their own balance line. The physician should direct the patient carefully and check over the performance of these exercises every week, adding new ones and leaving off the easier ones as the patient improves.

For local joint conditions during the acute stage, deformity must be prevented by rest in proper supports, but painless active motion is encouraged. These joints should never be manipulated by passive exercise, for swelling interferes with the circulation, which is already poor, and trauma is done the diseased tissues. During the subacute stage there are several forms of exercise that eliminate the weight of the extremity as a hindrance during movement and are helpful in allowing the patient to translate even minimal muscle power into active motion. In Gaenslen's sling suspension method the patient can exercise frequently for brief periods in the pain-free range. With a homemade tank in the average home the buoyancy of the water eliminates gravity and the warmth of the water relaxes the muscles and accelerates the blood flow.

After the acute and subacute stages have

passed, free and resistive exercises are given on prescription by the physician. There should be mimeographed sheets of exercises for each joint by which the physician can indicate the exercises to be used. The best results in the restoration of function in stiff joints following chronic arthritis is not from manipulation, but by the gradual use of these joints by directed exercise and occupational therapy.

In certain cases exercise apparatus is useful. Directions may be obtained from the author for the construction of stall bars for arm and leg exercises, a shoulder abduction ladder, a Kanavel hand table, and stairs with rails for stair-climbing exercise.

Rest and exercise are essential to the function of a joint. Motion should be encouraged in all stages of the disease, but this motion should be well within the fatigue limit.

Exercise for a single joint is monotonous. The human body is more than a machine, and the formal repetition of a movement either with or without an apparatus is not of maximum value in increasing the amount of movement in a stiff joint. There is not the psychological stimulant for personal incentive or sustained effort as in occupational therapy. Exercise given by an occupation with a definite object makes the patient forget the exercise because he is thinking of the task to be finished. This work must be directed to definitely exercise the part desired.

REST

Rest is an important physical agent in the treatment of arthritis, for chronic fatigue is one of the symptoms of this disease. The physical signs of fatigue are also present such as subnormal morning temperature, poor pulse, vasomotor instability, low blood pressure, low metabolism, and poor muscle tone. It is believed that this fatigue is due to disturbances of the normal physiology of the organs of the thorax and abdomen with effects on the circulation and sympathetic nervous system.

Rest should be prescribed with as much discrimination as any drug. Usually the rest should be in bed for certain periods daily or continuously. At first, after each meal, a pillow is placed under the shoulders, the hands are placed under the head, and a pillow is placed under the knees. This raises the chest and abdomen, hyperextends the dorsal spine, flattens the lumbar spine, and results in abdominal breathing with better use of the diaphragm.

After a half-hour the face-prone position is taken, and radiant heat is applied to the spine to stimulate spinal circulation. These periods are given after meals whether the patient is in bed continuously or ambulatory. If continuously in bed, these periods are continued until exercises and proper supports enable the patient to continue this correct position when up. They are then allowed up for increasing periods.

Rest is also an important agent in the local treatment of the affected joints. Rest and exercise are most important in the function of a joint. This rest should be in a position that is the best adapted to prevent strain or contracture, thus preventing deformities. The prescription of local rest illustrates the necessity of having the co-operation of an orthopedic surgeon in the treatment of chronic arthritis with physical therapy.

CONCLUSIONS

In chronic arthritis sufficient time for adequate treatment is fundamental, and physical therapy is an important adjunct in treatment. Physical agents can be used by any physician, but to secure the best results they must be carefully prescribed by the physician and used under his directions not only in the hospital and office, but for longer periods at home by the patient, assisted by some member of the family.

WHO WANTS STATE MEDICINE?

SINCE the subject of state medicine is still up it is appropriate for the medical profession to be on guard and equipped for combat.

The Public Relations Committee of the Michigan State Medical Association prepared a little brochure on the subject which we regard as especially good. The Michigan State Medical Society courteously granted us the permission of reproducing it here.

THE QUESTION

The high school and college debate question in some states is:

"Resolved: That the several states should enact legislation providing for a system of complete medical service available to all citizens at public expense."

This question is profound, one that has been the subject of many volumes and of discussions by the most learned people, who have been unable to reach any satisfactory conclusion.

The issues involved are:

- (a) Is medical service in Michigan satisfactory to those who receive and those who dispense it?
- (b) If some minor phase of medical service is unsatisfactory, is radical change by legislation warranted?
- (c) Would a proposed new system give the people of Michigan a better service of higher quality, and insure the advance of medical service, at a practicable figure for state financing?

The Michigan State Medical Society presents in the following pages some facts for your consideration. It thanks you for your interest in the subject and urges you to continue your search for the truth. In your studies of this question, look to the future.

The Michigan State Medical Society is not negative minded, has made exhaustive surveys in this State on this subject, and would welcome your suggestions and comments.

GROVER C. PENBERTHY, M.D.

President, Michigan State Medical Society.

NOT THE PUBLIC IN GENERAL

The public in general wants evolutionary progress in everything—not revolutionary upheaval.

The public in general finds *NO* real dissatisfaction with the kind of medical service it is receiving. It finds that under the present medical system, American preventive medicine is not equalled anywhere in the world, that American sickness and death rates are lower than in any other country. In Michigan, for example, the reduction in the death rate from a few diseases has been per hundred thousand:

	1900	1934
Diphtheria -----	21.85	.75
Typhoid Fever-----	34.03	1.28
Tuberculosis (all forms)	103.84	43.18
Smallpox -----	.3	(for 2 years) .0
Measles -----	14.1	.7
Diarrhea and Enteritis	96.53	7.6

The rate of decline is the true test of medical service. The private physician in America actually makes preventive medicine part of his practice. Under a scheme of social medicine, these figures will not continue to decrease, to judge by the experiences of European countries which have used such systems since 1883. Physicians there have no time for preventive medicine. Statistics prove this statement.

The public in general knows we in America have no serious epidemics today and that we live longer — thanks to the present system of medical care. In 1901, life expectancy in Michigan was 47.24 years; today it is 61.26 years. In the United States, hospital stay has been reduced from 20 to 10 days (1910-1935).

The public in general wonders, if the state is so interested in medical care, why it doesn't try to eliminate charlatans and quacks and thus prevent the expenditure of \$125,000,000 every year for such folly; why doesn't the state control patent medicine and thus save people \$350,000,000 that they spend every year on worthless and even dangerous nostrums?

The public in general has noted in recent experience that whenever public funds are offered to assist people, a request soon changes to a demand, and that doles lead to moral deterioration. The public knows that a more healthful situation exists when people earn and pay their own way rather than expect the state and government to care for them.

NOT THE PATIENT

The patient does not want to be dependent on bureaucracy for medical care.

The patient does not want inferior *quality* of medical service.

The patient knows that free choice of physician will be restricted or prohibited under a program of socialized medicine, as the leading physicians with more independence will not become a part of a socialized medicine scheme. Medical attention will become a mechanical system rather than a personal service. Mass production methods will be used.

The patient will lose the advantages of the confidential patient-family physician relationship wherein the individual needs of every person are recognized. If ever a human being wants to be an individual, it is when he is sick!

The very sick patient will not obtain adequate service because of the demands for unnecessary minor services by shams and neurotics. The quantity as well as the quality of service will be reduced through efforts to cut down costs.

The patient doesn't want any meddling third party to come between him and his physician. For example, in workmen's compensation cases, the pinchpenny insurance company which interrupts this satisfactory, personal relationship and rides roughshod over the rights of both patient and family physician, is the type of meddler the patient resents.

The patient doesn't want to suffer delay in treatment due to numerous bureaus and agencies to which he must apply, even after he has paid in his share of taxes or insur-

ance premiums. Such an inhuman system is not applicable to the ways of a free and independent people guaranteed life, liberty, and pursuit of happiness.

NOT THE FARMER

The farmer has a small annual cash income out of which he would have to pay taxes to maintain a compulsory medical system from which he would derive little or no benefit.

The farmer cannot see why it should be necessary for the state to provide medical care to wealthy citizens or those reasonably independent; or why the state should pay the bill for many self-inflicted diseases such as those occasioned by alcoholism and immorality.

The farmer objects to carrying a greater tax load in order that large masses of dependent people in the cities, such as indigent persons, may secure more privileges.

The farmer, necessarily more conscientious and careful about his budget than some other groups, feels that medical service deserves to be placed in the family budget ahead of luxuries. He is aghast at the figures of the annual expenditure per average family for luxuries:

Passenger automobiles	\$150.00
Tobacco	67.00
Gasoline (non-commercial)	37.00
Candy	37.00
Movies and entertainment	35.00
Soda waters, ice cream and gum	34.00
Jewelry and furs	29.00
Liquor (Michigan, 1935)	22.00
Radios and musical instruments	16.00
Cosmetics	15.00
<hr/>	
	\$442.00

The annual expenditure of the average farmer's family for physician's care (considering a family as 4.1 people) is \$62. The family tobacco bill is more than the farmer's family doctor bill! Twice as much is spent for candy as for hospitals. Twice as much is spent for cosmetics as for nursing. The luxuries win out over the necessities. They ruin every attempted budget!

NOT THE EMPLOYED PERSON

The American Federation of Labor has studied various forms of socialized medicine systems for many years, and to date has refused endorsement of any of them.

The employed person in this country does not want socialized medicine because he recognizes that it means less wages and more taxes.

The employed person realizes all too well that adequate living wages from which normal healthful living and competent medical care can be secured is to be preferred to insufficient income with inadequate clothing and food and unhealthful housing—all of which tend to bring on sickness. Sufficient food, fuel, warm clothing, and good housing would cut down illness and eliminate the problem. Most schemes of socialized medicine are but a poverty system substitute for the payment of adequate wages. The employed person prefers to purchase his own medical care and other necessities when and from whom he pleases in the true American way. His experience makes him suspicious of payment "in kind." With Samuel Gompers, he says: "Put it in the pay envelope and we'll buy our own welfare."

The employed person knows that socialized medicine means heavy *employe contributions* to build up an enormous fund from which one may never derive any benefit.

The employed person recognizes any socialization of medicine scheme to be nothing but "revolution insurance"—a trick employed by Bismarck in 1883 and Lloyd George in 1911 to hold and gain political power. Recent history shows it was very poor "revolution insurance."

The employed person wants a job and the health to keep on the job. He does not want to lose any time due to sickness. He knows that in Germany, under a health insurance system, time lost through sickness by insured workmen trebled in fifty years. In England the time lost increased from nine days, before compulsory insurance

went into effect, to twelve and one-half days per man yearly, after the system was in operation. The comparison with American figures is striking, for the average loss of time by our own workmen is only about six and one-half days a year, and the figures have been stationary at that level for twenty-five years, and under a system of private medical practice!

The employed person and all others have heard the oft-repeated argument that compulsory education has been a success—why not compulsory sickness insurance or state medicine? Here we find an inaccurate and misleading false premise: no general federally-controlled educational system exists! Moreover, American communities are jealous in their *local* administration of education; they control selection of teachers, subjects, and textbooks. Also teachers fight standardization, mass handling of problems, and attempts of politicians to gain control. In addition, while it may be possible to give information to a group in a school, medical service cannot be given that way. Every patient is a distinct medical personality or question mark.

NOT THE TAXPAYER

The taxpayer paid \$82,000,000 this year to the State of Michigan (not to mention the \$118,000,000 he paid to the county, city and township governments of this state). Saddle on the taxpayer a complete system of "free" medicine for all the 4,707,465 people in this state, and you increase taxes by \$171,820,647!* The state taxes would have to be more than tripled! The sales tax, mainstay of the State of Michigan budget, would be nine per cent instead of three per cent!

Add to this, cash payments for lost workdays due to illness, including feigned

*Based on the estimate of a proponent, Mr. Bower Aly, who stated: "A program of complete medical care available to every person would actually cost only ten cents per day per person."—in the Radio Debate on State Medicine, November 12, 1935.

illness, and your sales tax becomes eighteen per cent instead of three per cent!!! Shall the back of the taxpayer be broken?

The taxpayer knows that any "free" service or commodity is abused by many who seek to obtain more than their just share, thus increasing costs.

The taxpayer would pay first-rate prices for inferior quality medicine. In Germany, socialized medicine is known as "second class" service.

The taxpayer knows, from sad experience, that politics and bureaucracy would interfere in a state system of medicine, resulting in monetary and scientific waste. Ample illustrations of waste may be seen in governmental activities and functions.

The taxpayer, knowing that economic depressions increased government spending in the face of lessened income, realizes that a socialized medicine plan will mean either greater taxation during trying times, or a drastic curtailment in medical service just when most needed. Government never saves up for a "rainy day."

The taxpayer knows that service at "public expense" is far from being a free service. The tax collector collects his bills. None can escape.

NOT THE PHYSICIAN

Over 100,000 physicians in the United States do not want socialized medicine as it would furnish to the people a medical service limited in scope, and would destroy public confidence in the medical profession.

The physician has a sacred obligation to maintain the *quality* of medical care. Socialized medicine would be deficient in quality, as demonstrated abroad.

The physician does not want the noblest of professions to become a political football, with favoritism and patronage resulting in slipshod diagnoses and neglected treatment of patients.

The physician does not want his patients to substitute suspicion for responsibility, and resentment for friendship. This will

be one of the bad results when cash benefits are combined with service benefits. People who are actually paid for being sick will have no desire to get well quickly, and will resent attempts of the conscientious physician to certify them back to duty.

The physician has made tremendous inroads against all forms of disease and in public health effort. His work has added to the average age of the individual at death. In 1900, the average age at death in Michigan was 54.26; in 1933, it was 59.31. The physician does not want this progress retarded.

The physician does not desire to lose his initiative, resourcefulness, incentive to improve himself, and ambition to render the best service. The patient will suffer if these are supplanted by routine care and governmental red tape. Some physicians in insurance practice lose their interest in keeping abreast of medical progress; the course in administration throws emphasis on other matters than on scientific medicine.

The physician is continuously progressive. We cannot find another body of men and women always trying to educate themselves and the public! In social endeavor, physicians are experimenting at the present time on more than two hundred plans and methods in various parts of the country to solve an economic problem that has become acute only during the artificial period of the past six years. Physicians are continuously rejecting any bad features, preserving the good points, and actually conducting more "test tube" experiments than were ever thought of by their critics or the pressure foundations.

PROFIT SEEKERS

The seeker after personal profit would gain from the by-products of a system of socialized medicine. He is in one of these groups:

- (a) The third party, intervening between patient and physician, such as the insurance carrier, the lodge, the "friendly society";

all these would immediately take on new activity and more tax-supported employees.

- (b) A very small minority group of physicians whose friendship with unscrupulous politicians would result in their sharing in the spoils.
- (c) Professional philanthropy and social welfare have created a new profession. Some social workers see in socialization of medicine a multiplication of their work in providing medical relief, and also the creation of a fertile field for the fast-growing profession and for the employment of large numbers of such social workers. More work—more social workers!
- (d) Certain business firms which stand to profit from large orders for supplies and building materials resulting from a governmental system of medical care.

The seeker after personal profit knows that the complicated administrative work and governmental red tape of a socialized medicine program would require thousands of employes, with the high-salaried positions picked off by those on the "band wagon." He or she knows that the expenses for administration in England have amounted to over half of the total paid to physicians, and that the number of non-medical workers in Germany is greater than the total of physicians doing the medical work!

The seeker after personal profit learns that the thirty-five million health insured people of Germany pay rates which have increased from three per cent to 6.5 per cent of monthly earnings! This represents a golden opportunity to the profit seeker.

PAID REFORMERS

The paid reformer would completely change the present facilities for medical service because of a negligible percentage of the people who are said to find illness costs heavy in a given year.

The paid reformer has been told, but forgets, that the Committee on the Costs of Medical Care surveyed from month to month for an entire year the health needs of some 39,000 people in this country. Of

the total, some 47.9 per cent needed medical care and received it: 47.1 per cent of the people had no need for medical care during the year despite monthly visits of a nurse, who was endeavoring to check their needs. This leaves but five per cent of the people to be accounted for, and, having in mind those who choose to go to cult practitioners, it would appear that there is a negligible, if any, percentage of the people who ask for medical service and do not receive it. Should the scientific benefits of our present system of *quality* service be sacrificed to protect (partly) against sickness costs for a negligible percentage of the population?

The paid reformer is ever seeking a panacea for poverty. In socialized medicine he visions a "new cure" and refuses to admit the probability of failure. The experience of others—"If Germany had no social insurance system, but still had her fifty years of experience in it, she certainly would not adopt social insurance today"—means nothing to the reformer who finds it hard to be practical. As a panacea for poverty, sickness insurance is a poor excuse!

The salaried altruist may make high-sounding promises whose fulfillment is too expensive for this or any civilization to attempt.

UNSCRUPULOUS POLITICIANS*

The unscrupulous politician sees in socialization of medicine the control of a vast new patronage army. Hundreds of choice jobs can be passed out. Changes of administration and the spoils system will cause the practice of medicine to become a political lottery with political skill, instead of professional skill, rewarded.

The unscrupulous politician knows that socialization of medicine will shunt large sums of money—millions of dollars—into his hands, to be administered by himself and his aides.

A political system will furnish the oppor-

*The unscrupulous politician is differentiated from the statesman.

tunity to let out building contracts for large public hospitals, sanatoria, health clinics, etc., at great costs. Big money for stone and mortar; little or none for preventive medicine.

The unscrupulous politician will insist on cash benefits in any socialized medicine legislation. Every recipient of a check will keep him in office and power. What a system for gaining influence and votes!

The unscrupulous politician may make campaign promises to provide good medical care to the people, but after election the service may be indifferent or frankly bad. In the patient's interest, the medical profession will fight this but it will not be able to insist on every necessary service. This is borne out by recent experience in the United States with the federal relief system, and in Michigan with medical care provisions for crippled and afflicted children and afflicted adults. Certain minimum standards of medical service immediately became the maximum standards.

The unscrupulous politician's control will result in: (a) less skilled men in the profession, since young men of ability will not be attracted to the conditions of socialized practice; (b) a mechanical system wherein there will be no incentive for research or progress; (c) a loss of independence and an inability to provide treatment thought necessary; (d) overwork by the physician and the loss of respect of patients.

PHILANTHROPISTS' PAID AGENTS

The paid agents of certain philanthropists and certain social workers are interested in the relief of poverty and in securing the resources for such relief. Such social workers distribute cash benefits, not their own money, according to their own standards and opinions of what is good for the recipient. They naturally seek to do the same with the services of the physician (also not their property), and resent any implication that they are not equally competent to determine how and to whom and in what amounts these services shall be distributed.

A number of so-called philanthropic foundations have spent millions of dollars in the last ten years on surveys of medical care. The money so spent would have paid for the medical care of all the people detected by these surveys as capable of using some medical or dental service.

These foundations represent no truly public organization or the people, but extremely limited groups which dominate. These representatives of certain large corporations are interested because of savings in wages their corporations could effect under a socialized system of medical care.

The wholesale propaganda about medical care developed by well-paid agents of these philanthropists, most of whom are not physicians, is an attempt to trick the public into demanding certain paternalistic benefits "in kind" (paid by the taxpayer). It is also an attempt to develop a defeatist attitude in the medical profession.

These foundations have never studied or proposed any legislation to increase the money wage of labor. Their tremendous and costly propaganda campaigns concentrate on the distribution of minimum quantities of medical service to the worker as a substitute for giving him his own purchasing power.

The paid agents of certain philanthropists refuse to listen to reason or experience. They know, for instance, that few major insurance companies in the United States are willing to write sickness insurance, because it is a losing business. This does not impress the paid agents of these philanthropists—they know the average citizen doesn't bother about profit and loss to government, until the tax bill arrives and then it's too late to change the system.

KNOW ALL THE FACTS

The Michigan State Medical Society is not now and never has been in favor of socialized medicine or compulsory sickness insurance. In 1934, its committee on medical economics presented a mutual health service plan to the House of Delegates of

the State Society as a committee report, upon which no action has been taken.

Since 1931, the Michigan State Medical Society has sponsored studies costing \$20,-168.96 designed to perfect both the distribution of medical care and its high quality. It has gone far to cut the cost of illness. From its comprehensive surveys, it finds no existing evidence of comparable data to show that a socialized medicine system would work in Michigan. This state is unique in its government, per capita wealth, type of population, rural and urban areas, etc.

The physician receives approximately two-fifths of the total expenditures for medical care in the United States, according to data obtained from the Metropolitan Life Insurance Company.

Medical and surgical services are indefinite scientific services measured in nature and amount according to the demands of the individual. Medical service, therefore, is not comparable to commodities sold by units of measure and weight which are always constant.

At most, only from ten per cent to fifteen per cent of sickness is serious. Under a scheme of socialized medicine, minor illnesses would get most of the attention because people who pay the taxes will insist upon deriving benefit from their money—and then some!

No one in Michigan who has asked for medical care has been found without it. None need hesitate to seek service for they can receive it at a cost within their individual means to meet and, if necessary, on a post-payment plan by mutual agreement with their own family physician.

The American medical profession has always provided and furnished good medical care. No other class of men is so generous of their services and do so much charity cheerfully. Let us not change this picture.

LET THE BUYER BEWARE!

Beware a system of medical care which would:

- (1) Be so costly that it would result in overburdening taxes.
- (2) Become a political football.
- (3) Destroy public confidence in medical service.
- (4) Be undesirable in its very nature (impracticable and inefficient).
- (5) Discourage quality service.
- (6) Substitute a mass production system for an individual personalized service.

Beware any system of medicine which might force the physician to give anything but the best service. Put him on so poor a scale that he cannot keep his self-respect and he will feel inclined to give value received—poor service.

“Good service to the sick is worth what it costs.

“Poor service is likely to be worth little or nothing.”

—Committee on Costs of Medical Care.

Beware false prophets whose loud voices seek to disguise selfish designs to build up greater profits for themselves.

America must not copy the mistakes of foreign systems of medical care, either in policy or method. Americans want American ideals and service.

“Seeking to better, oft we mar what's well.”—Shakespeare.

TEN POINTS FOR THE PEOPLE'S PROTECTION

1. All features of medical service in any method of medical practice should be under control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

2. No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.

3. Patients must have absolute freedom to choose a legally qualified doctor of medicine who will serve them from among all those qualified to practice and who are willing to give service.

4. The method of giving the service must retain a permanent, confidential relation between the patient and a “family physician.” This relation must be the funda-

mental and dominating feature of any system.

5. All medical phases of all institutions involved in the medical service should be under professional control, it being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value depends on their operation according to medical standards.

6. In whatever way the cost of medical service may be distributed, it should be paid

for by the patient in accordance with his income status and in the manner that is mutually satisfactory.

7. Medical service must have no connection in any cash benefits.

8. Any form of medical service should include within its scope all qualified physicians of the locality covered by its operation who wish to give service under the conditions established.

9. Systems for the relief of low-income classes should be limited strictly to those below the "comfort level" standard of incomes.

10. There should be no restrictions on treatment or prescribing not formulated and enforced by the organized medical profession.

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H. H. SHOULDERS, M.D., Editor and Secretary

AUGUST, 1936

EDITORIAL

MEDICINE'S HORSE AND BUGGY

Our attention was called to an article in the July issue of the magazine, *Forum and Century*, written by James Rorty, under the heading "Medicine's Horse and Buggy."

This article deserves careful attention. It is filled, very largely, with quotations and assertions which are paraded as facts and conclusions. As a whole, it is very cleverly written, and doubtless will accomplish, in some degree, its purpose—namely, that of deceiving the public and the profession. It is propaganda.

The author starts out with the question, "Who Is Stopping Health Insurance?" He answers the question by saying the "American Medical Association." He qualifies his answer, however, with an attempt to answer several other questions.

At the outset he accepts as facts a few findings compiled by the Committee on the Costs of Medical Care. He disregards the fact that all these figures as to costs, etc., were compiled in one economic period and we are actually living in another. He does not mention the fact that the studies by the committee embrace a very small fraction of the territory of this country and a very small fraction of the population—too small, of course, to be representative even at the time.

He states his philosophy in the following words: "We have, finally, as the theoretical basis of our social philosophy, the right to life of American citizens, and the obli-

gation of the state to defend and maintain this right, including the right to medical care of those who need it. This right, incidentally, is not questioned by the average American physician, whose individual performance during the depression, entailing often great personal sacrifice and hardship, is on the whole beyond praise."

It will be noted that the author boldly asserts certain rights as to life. He omits the right to *liberty* and the *pursuit of happiness*. This omission certainly has deep significance. He discards from his thinking the fact that human individuals in times past have esteemed the right to liberty higher than life. In fact, life has been sacrificed to attain liberty. He boldly asserts that these rights are the obligation of the state to the individual and then boldly asserts that these rights are not questioned by the average physician. As a matter of fact, the medical profession does seriously question the philosophy which holds that the state owes the individual medical care under all circumstances. The medical profession is fighting for the liberty of those who can take care of themselves, and for charity to those who cannot take care of themselves.

The assumption is implied at least in these assertions that a bureaucratic governmental agency could arrogate to itself the power to tax all the people, and the power to dictate to all the people both doctors and to patients, and by the exercise of such powers guarantee the life he speaks of. He fails to take into account the fact that in the country where such powers are exercised no such result has been accomplished.

Some of the data he presents, of course, are very far-fetched. For example, he states, "The Division of Handicapped Children of the New York Department of Education reports that one out of every five of New York's school children is so weak from malnutrition that he cannot profit by attendance in regular classes."

He quotes also from an executive of the Milbank Memorial Fund as follows: "In a year's time, even in a prosperous era, millions of families cannot afford to obtain any medical care; hundreds of thousands of cases of illness needing medical attention

are unattended; less than seven per cent of the population have even a partial physical examination, and less than five per cent are immunized against some disease."

He selects such quotations as suit his purpose from whatever source they may be had and then fits them in the pattern of his crazy quilt.

Concerning the malnutrition of children in New York State the conclusion is implied that this unfortunate state of affairs is due to the system of medical practice in America and that to correct it a communistic form of medicine (misnamed social insurance) should be established. According to his own quotation the children need food, not doctors. It does seem that if he has the interest in these children he pretends to have he would propose some communistic scheme by which the production and distribution of food would be accomplished by a government bureau.

It appears that the research people who made these findings and reports made no effort whatever to go into detail and find out why such a high percentage of school children have such a high degree of malnutrition. He does not even take into consideration the fact that malnutrition in children may be due to a number of causes, none of which have anything to do with medical care. A few of those are as follows: (1) Parental neglect. (2) Poverty. (3) Ignorance. He loses sight of the fact that there are many cases of malnutrition in the homes of the well-to-do. He loses sight of the fact that children often are fed the wrong kind of food because the spoiled child prefers it, etc. He does not refer to the malnutrition in the children in the Russian institutions maintained by the government for the proper care of children.

Broadly speaking, this is certainly a strong indictment of the educational system of New York State. It might be stated as a fact that Southern children can do without shoes better than New York children can do without food, if one or the other is to be done without.

It is nothing short of ridiculous that such data are included in an article written in support of some form of compulsory health insurance.

Much of his article is devoted to mudslinging directed at the American Medical Association and Dr. Morris Fishbein.

He blames the American Medical Association for the fact that Mr. John A. Kingsbury, one time secretary of the Milbank Memorial Fund, was fired by the directors after he went to Russia and spent a short time in that country and wrote a book called "Red Medicine" in which he lauded communistic medicine very highly. He doesn't note the ridiculous picture presented by the Milbank Memorial Fund drawing its revenues from the profits of the Borden Milk Company of New York. These profits accrue in part from milk for children, and, according to the report, he quotes a high percentage of the children of New York State need milk and don't get it. Notwithstanding this fact, the Milbank Memorial Fund would help to finance the movement aimed at the socialization of the practice of medicine in America. It seems more appropriate that it finance the socialization of milk production and distribution.

It appears more likely that the directors of the Milbank Memorial Fund fired Mr. Kingsbury because of the ridiculousness of his actions.

Most important of all, the author assumes to know why certain persons were placed in high executive positions in the United States government. He assumes to know why social insurance was left out of the Social Security Act. He seems to know also when another push is to be made to put over social insurance.

He says: "Today, with Thomas Parran, Jr., as surgeon-general and Josephine Roche as the Treasury Department's secretary for health, we may confidently expect continued pressure both from within and without the government toward the reorganization of the health services."

He winds up his article with the following paragraph: "Finally, the younger men suspect with some reason that the American Medical Association was bragging when it claimed to have stopped health insurance. There were several other reasons, not all of them connected with pressure politics, why health insurance did not get into the Social Security Act. Roosevelt,

whose political ear is excellent, was willing to buck the Chamber of Commerce on the issue of unemployment insurance. Is there any reason to suppose that, if elected for a second term, as he probably will be, he will hesitate to buck the A. M. A. hierarchy? There is not. It would seem that the sooner Dr. Fishbein and his cohorts see the light the better for them, as well as the public health."

Does the author know what he is talking about or is he indulging in rash assumptions? If his statements are true, if he does know what he is talking about, then a serious situation confronts the medical profession and the American public at this time when a new Congress is to be elected.

He indicates that social insurance is to be sponsored by the present national administration if reelected. He also indicates that certain persons have been placed in high positions in the United States Public Health Service to aid in accomplishing this very purpose.

If he is merely stating a wild assumption of his own these responsible executives should take steps to correct the false impressions he has made. In so far as we know, the author has not yet been condemned by the heads of the United States Public Health for rash assumptions.

Space will not permit of a detailed discussion of much the article contains. It is obvious that the author of this article is far more capable as a writer of fiction than he is as a portrayer of facts.

It is high time that American citizens examine with care the reports of socialistic groups allegedly engaged in research.

It is high time the fact was recognized that many persons engaged in so-called research always find the very thing they go out to find. It requires effort to disprove these allegations many times. It also requires effort to preserve the precious heritage of liberty which our forefathers were willing to die to achieve.

In a little book entitled "Valley Forge," written by Mr. Anderson, the author has George Washington saying to his associates at a very critical period of the Revolution-

ary War, "Liberty will seem cheap by and by when nobody dies to get it."

STATE BOARD OF MEDICAL EXAMINERS

The State Board of Medical Examiners is charged with the performance of a difficult task. The task of passing on the fitness of persons to engage in medical practice is one of its duties. This is a difficult task. It is not possible always to judge the moral fibre of those who have been in school the greater portion of their lives and have finally accomplished all the schooling required to fit them for the practice of medicine. Under the stress and strain of actual practice it is demonstrated that some do not possess the moral fibre necessary for a high order of ethical practice. Fortunately the number is relatively small. The board has, therefore, been empowered to revoke the license of those found to be unfit and especially those found guilty of crimes involving moral turpitude. This power has been used very sparingly by the board in Tennessee, probably too sparingly.

The board met recently for the purpose of considering the question of revoking the licenses of a number of doctors in Tennessee who had been found guilty of violating the narcotic law.

It is understood that the licenses of a number of doctors were revoked by the board.

It is also understood that the right of the board to revoke these licenses is to be challenged in the courts.

Organized medicine holds no brief for doctors who would use the high privilege of medical practice to engage in violations of the narcotic laws.

Federal authorities charged with the enforcement of the narcotic law have complained that state boards of examiners have been too slow to revoke licenses where indicated.

Some doctors doubtless have been guilty of technical violations which result in no harm to the public and no profit to the doctor. Such violations, of course, merit no punishment so severe as that of revoking a license to practice. However, when a doctor knowingly violates the law in such a

way as to obtain a profit for himself and promote an illegal traffic in narcotics he has committed a crime involving moral turpitude and his license should be revoked.

The board is to be commended for its efforts.

DEATHS

Dr. A. N. Gordon, Fosterville, University of Nashville, 1905; aged 57; died suddenly, August 2.

Dr. S. F. Hinson, Newbern; University of Tennessee, College of Medicine, 1899; aged 65; died August 3 after a brief illness.

NEWS NOTES AND COMMENTS

Dr. Franklin B. Bogart announces the addition of a 200 K. V. P., 25 M. A., Shock-proof X-ray Therapy Unit, 311 Medical Arts Building, Chattanooga, Tennessee.

The American Board of Ophthalmology announces the removal of its executive offices to room 1002, Beaumont Medical Building, 3720 Washington Boulevard, St. Louis, Missouri.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next written examination and review of case histories of Group B applicants by the American Board of Obstetrics and Gynecology will be held in various cities in the United States and Canada on Saturday, November 7, 1936.

Application blanks and booklets of information may be obtained from Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, Pennsylvania. Applications for this examination must be filed in the secretary's office sixty days prior to the scheduled date of examination.

DO YOU KNOW ABOUT THE VOLTA BUREAU?

"We consulted several specialists, and all of them confirmed our fears, but none offered any solution of our problem." Thus

the mother of a small deaf child wrote to the Volta Bureau. The sentence might be quoted verbatim from many letters written by parents of deaf or hard of hearing children, or by hard of hearing adults.

The knowledge that deafness is present and that it is incurable comes with the force of a major calamity. It is so crushing in its effect that something positive in the way of help must be offered immediately, if the individual is not to spend desperate years in a bewildered effort to adjust himself. The parents of a deaf child must be told that the child can be taught to speak and can be successfully educated, and that this education may be begun at home immediately, even if the child is not more than two years old. The parents of a child whose hearing is only slightly impaired must be given advice as to his adjustment. The hard of hearing adult must be told about lip reading, about hearing aids, about social efforts in his behalf.

The Volta Bureau was established for the purpose of furnishing all this information to all who ask for it. Its services are free. Alexander Graham Bell, the son of a hard of hearing mother, the husband of a deaf wife, the lifelong friend of every one handicapped by deafness, used the money received as a prize for inventing the telephone to found the Volta Bureau so that any one confronting the problems of deafness might be assured of help. Advice is given as to schools and preschool training, lip-reading instruction, hearing aids, social contacts, psychological difficulties. While the Volta Bureau is not equipped to do employment service, it gives information in regard to the fields of activity that are open to the deaf and the hard of hearing.

The Volta Review, a magazine for parents and teachers of the deaf and for the hard of hearing, is on the reading table of many physicians. Pamphlets dealing with all phases of deafness except medical problems are available to all who ask for them. Lists of such pamphlets and sample copies of the magazine will gladly be sent free of charge. The Volta Bureau is located at 1537 Thirty-fifth Street, N.W., Washington, D. C.

LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. W. L. Williamson, 915 Madison Avenue, Memphis.

Vice President for West Tennessee—Dr. J. E. Powers, Jackson.

Vice President for Middle Tennessee—Dr. J. O. Walker, Franklin.

Vice President for East Tennessee—Dr. Lee K. Gibson, Johnson City.

Secretary—Editor—Dr. H. H. Shoulders.

Assistant Secretary—Editor—Dr. W. M. Hardy.

TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.

Dr. A. F. Cooper, Goodwyn Institute Building, Memphis.

Dr. E. R. Zemp, Walnut Street, Knoxville.

Dr. Franklin B. Bogart, Medical Arts Building, Chattanooga.

Dr. John B. Steele, Volunteer Building, Chattanooga.

COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.

Second District—Dr. S. R. Miller, Knoxville.

Third District—Dr. Hiram A. Laws, Jr., Chattanooga.

Fourth District—Dr. J. T. Moore, Algood.

Fifth District—Dr. John W. Sutton, Petersburg.

Sixth District—Dr. L. W. Edwards, Nashville.

Seventh District—Dr. C. D. Walton, Mt. Pleasant.

Eighth District—Dr. J. R. Thompson, Jackson.

Ninth District—Dr. E. H. Baird, Dyersburg.

Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—

Dr. E. G. Wood, Knoxville; East Tennessee.

Dr. H. H. Shoulders, Nashville; Middle Tennessee.

Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—

Dr. E. T. Newell, Chattanooga; East Tennessee.

Dr. J. O. Manier, Nashville; Middle Tennessee.

Dr. E. C. Ellett, Memphis; West Tennessee.

OFFICERS OF COUNTY MEDICAL SOCIETIES

COUNTY	PRESIDENT	VICE PRESIDENT	SECRETARY-TREASURER
Anderson	Edward Dickson, Coal Creek	W. B. Barton, Briceville	J. S. Hall, Clinton
Bedford	Alfred Farrar, Shelbyville	J. W. Reed, Belfast	W. H. Avery, Shelbyville
Blount	L. C. Olin, Maryville	H. A. Callaway, Maryville	W. C. Crowder, Maryville
Bradley	J. L. McClary, Cleveland	W. C. Stansberry, Charleston	Claud Taylor, Cleveland
Campbell	A. A. Baird, Pruden	M. L. Davis, Caryville	R. J. Buckman, LaFollette
Carroll	E. W. Hillsman, Trezevant		J. H. Williams, McKenzie
Carter	E. T. Pearson, Elizabethton	J. B. Shoun, Elizabethton	E. L. Caudell, Elizabethton
Chester, Henderson, and Decatur	C. H. Johnson, Lexington	J. L. McMillen, Decaturville	L. C. Smith, Henderson
Cocke	Drew A. Mims, Newport	Chas. Ruble, Newport	J. E. Hampton, Newport
Cumberland	E. W. Mitchell, Crossville		V. L. Lewis, Crossville
Davidson	H. S. Shoulders, Nashville	H. L. Douglas, Nashville	J. P. Gilbert, Nashville
Dickson	L. F. Loggins, Charlotte		R. P. Beasley, Dickson
Dyer, Lake, Crockett	R. C. Newkirk, Tiptonville	John E. Frazier, Newbern (Dyer)	C. L. Denton, Dyersburg
		R. W. Griffin, Tiptonville (Lake)	
Fayette-Hardeman	L. D. McAuley, Oakland	Leon Pope, Grand Junction	A. Richards, Bolivar
Fentress	C. A. Collins, Wilder	A. H. Crouch, Forbus	J. P. Sloan, Jamestown
Franklin	W. F. Smith, Decherd	A. P. Smith, Winchester	John M. Hardy, Sewanee
Gibson	L. H. Montgomery, Trenton	H. P. Clemmer, Milan	F. L. Roberts, Trenton
Giles	R. E. Warren, Pulaski	J. G. Waldrop, Lewisburg	T. F. Booth, Pulaski
Greene	N. H. Crews, Greeneville	R. S. Cowles, Greeneville	C. P. Fox, Jr., Greeneville
Grundy	U. B. Bowden, Pelham	O. H. Clements, Palmer	T. F. Taylor, Monteagle
Hamblen	P. L. Brock, Morristown	W. E. Howell, Morristown	J. F. Campbell, Morristown
Hamilton	D. M. Williams, Chattanooga	E. A. Gilbert, Chattanooga	J. Marsh Frere, Chattanooga
Hardin, Lawrence, Lewis, Perry, and Wayne	W. E. Boyce, Flatwoods	J. H. Taylor, Morris Chapel (Hardin)	O. H. Williams, Savannah
		J. W. Danley, Lawrenceburg (Lawrence)	
		Paul Wiley, Hohenwald (Lewis)	
		W. E. Turner, Lobelville (Perry)	
		D. L. Woods, Waynesboro (Wayne)	
Haywood	A. H. Sorrell, Brownsville	John C. Thornton, Brownsville	Roy M. Lanier, Brownsville
Henry	A. F. Paschall, Puryear	Eloy Scruggs, Paris	R. Graham Fish, Paris
Hickman	L. F. Pritchard, Only	C. V. Stephenson, Centerville	W. K. Edwards, Centerville
Humphreys			W. W. Slayden, Waverly
Jackson	J. D. Quarles, Whitleyville	R. C. Gaw, Gainesboro	F. B. Clark, Gainesboro
Knox	M. S. Roberts, Knoxville	John R. Smoot, Knoxville	Jesse C. Hill, Knoxville
Lauderdale	Thos. F. Pipkin, Henning	J. H. Nunn, Ripley	Thos. E. Miller, Ripley
Lincoln	H. K. Alexander, Fayetteville	R. E. McCown, Fayetteville	M. F. Brown, Fayetteville
Macon	D. D. Howser, Lafayette	P. East, Lafayette	J. Y. Freeman, Lafayette
Madison	J. C. Pierce, Mercer	John E. Powers, Jackson	S. M. Herron, Jackson
Maury	D. B. Andrews, Columbia	O. C. Fowler, Spring Hill	C. D. Walton, Mt. Pleasant
		H. C. Busby, Columbia	
McMinn			L. A. Brendle, Englewood
McNairy	John R. Smith, Selmer	G. B. Curry, Selmer	H. C. Sanders, Selmer
Monroe	T. M. Roberts, Sweetwater	J. A. Hardin, Sweetwater	W. J. Cameron, Sweetwater
Montgomery	F. A. Martin, Cumberland City	R. M. Workman, Clarksville	Philip L. Lyle, Clarksville
Obion	W. B. Harrison, Union City	Ilar Glover, Union City	Frank B. Kimzey, Union City
Overton			A. B. Qualls, Livingston
Polk	W. Y. Gilliam, Copperhill	W. C. Strauss, Copperhill	F. O. Geisler, Isabella
Putnam	J. Fred Terry, Cookeville	W. A. Howard, Cookeville	Thurman Shipley, Cookeville
Roane	F. D. Owings, Rockwood	T. L. Bowman, Harriman	W. W. Hill, Harriman
Robertson	W. F. Fyke, Springfield	E. W. Adair, Springfield	W. S. Rude, Ridgeto
Rutherford	J. D. Hall, Readyville	B. W. Rawlins, Murfreesboro	J. A. Scott, Murfreesboro
Scott			D. M. Woodward, Winona
Sevier	R. J. Ingle, Sevierville	C. P. Wilson, Sevierville	R. C. Kash, Sevierville
Shelby	Robin F. Mason, Memphis	F. W. Smythe, Memphis	A. F. Cooper, Memphis, Secretary
	O. S. Warr, Memphis, President-Elect		J. J. Hobson, Memphis, Treasurer
Smith	Rhea E. Garrett, Dixon Springs	J. G. Bridges, Gordonsville	Thayer S. Wilson, Gordonsville
Sullivan and Johnson	W. H. Reed, Kingsport	D. D. Vance, Bristol (Sullivan)	T. R. Bowers, Bristol
		R. O. Glenn, Mountain City (Johnson)	
Sumner	C. D. Giles, Gallatin	L. A. Absher, Portland	Harold Kelso, Gallatin
Tipton	A. J. Roby, Covington	L. J. Lindsey, Covington	H. C. Currie, Covington
Warren	John S. Harris, McMinnville	E. L. Mooneyham, Rock Island	John T. Mason, McMinnville
Washington	W. M. Bevis, Johnson City	J. L. Hankins, Johnson City	C. H. Long, Johnson City
Weakley	J. A. Moore, Sharon	G. C. Thomas, Greenfield	P. W. Wilson, Dresden
White	S. E. Gaines, Sparta	Vernon Hutton, Ravenscroft	A. F. Richards, Sparta
Williamson	R. H. Hutcheson, Franklin	Knox Galloway, Franklin	K. S. Howlett, Franklin
Wilson	L. L. Tilley, Lebanon	M. H. Wells, Watertown	R. B. Gaston, Lebanon

COMMITTEES

The following is a list of the standing committees of the Tennessee State Medical Association provided for in the constitution and by-laws and appointed by the proper authority, together with some special committees appointed under the authority of a resolution by the House of Delegates.

Some of the committees are appointed for a definite period. In such instances the appointment of the committeeman expires with the meeting of the House of Delegates in the year stated opposite his name.

COMMITTEE ON SCIENTIFIC WORK

H. H. Shoulders, Chairman, Nashville.
A. F. Cooper, Memphis.
Frank Harris, Chattanooga.
A. H. Lancaster, Knoxville.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

L. W. Edwards, Chairman, Nashville (1939).
E. W. Cocke, Bolivar (1941).
Battle Malone, Memphis (1940).
Tom Barry, Knoxville (1938).
T. R. Ray, Shelbyville (1937).

LIAISON COMMITTEE

W. C. Dixon, Chairman, Nashville (1941).
W. P. Wood, Knoxville (1940).
Hiram A. Laws, Chattanooga (1939).
Tom Mitchell, Memphis (1938).
J. L. Raulston, Knoxville (1937).

STATE TUBERCULOSIS HOSPITAL COMMISSION

W. S. Rude, Chairman, Ridgetop.
O. N. Bryan, Nashville.
C. M. Oberschmidt, Memphis.
J. L. Hamilton, Chattanooga.

HOSPITAL COMMITTEE

D. R. Pickens, Chairman, Nashville.
E. H. Baird, Dyersburg.
H. Quiggs Fletcher, Chattanooga.
Kyle Copenhagen, Knoxville.
H. B. Everett, Memphis.
Lee Gibson, Johnson City.

COMMITTEE ON INSURANCE

A. F. Cooper, Chairman, Memphis.
C. M. Hamilton, Nashville.
S. R. Miller, Knoxville.

COMMITTEE ON MEDICAL DEFENSE

S. R. Miller, Chairman, Knoxville.
H. B. Everett, Memphis.
H. M. Tigert, Nashville.

ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

Not yet appointed.

SUPERVISORY COMMITTEE

(Representing the Tennessee State Medical Association)

J. R. Reinberger, Memphis.
O. S. Warr, Memphis.
F. B. Bogart, Chattanooga.
J. O. Manier, Nashville.

COMMITTEE ON EDUCATION

O. S. Warr, Chairman, Memphis (1938).
R. B. Wood, Knoxville (1938).
W. G. Kennon, Nashville (1937).
J. Marsh Frere, Chattanooga (1937).
W. O. Baird, Henderson (1939).
J. M. Lee, Nashville (1939).

The following committees are expected to serve under the supervision of the Committee on Education:

(A) COMMITTEE ON MATERNAL WELFARE

J. R. Reinberger, Chairman, Memphis.
M. S. Lewis, Nashville.
H. B. Hewitt, Chattanooga.
Andrew Smith, Knoxville.

(B) COMMITTEE ON CHILD WELFARE

W. D. Anderson, Chairman, Chattanooga.
Oliver Hill, Knoxville.
H. G. Bradley, Nashville.
W. L. Rucks, Memphis.

(C) CANCER COMMITTEE

Ralph Monger, Chairman, Knoxville.
S. J. Sullivan, Cleveland.
Howard King, Nashville.
H. S. Shoulders, Nashville.
J. W. McClaran, Jackson.
Frank Smythe, Memphis.

(D) COMMITTEE ON PHYSICAL THERAPY

A. H. Meyer, Chairman, Memphis.
W. E. Van Order, Chattanooga.
J. F. Hamilton, Memphis.
R. W. Billington, Nashville.
J. P. Gilbert, Nashville.

MEDICAL SOCIETIES

Campbell County:

The Campbell County Medical Society met in La Follette on July 30. Dr. J. B. Neil, urologist from Knoxville, read a paper on "A New Method of Transurethral Prostatic Resection." This paper was very interesting and instructive and brought out the safety and efficiency of this new method Dr. Neil has developed. Also of practical value was the fact that prostatic enlargement can be entirely checked in the early stages before it gets to the enlarged stage where it embarrasses urinary outflow.

With Dr. Neil from Knoxville came Dr. Eugene Abercrombie and Dr. Jack Chesney, who were welcome visitors. Dr. Tom West, from Memphis, was also a welcome guest. Members present were Drs. R. L. Gallaher, J. P. Lindsey, M. L. Davis, R. W. Lewis, A. B. Lawson, G. M. Rogers, and R. J. Buckman. After the meeting the visiting doctors were taken to lunch where the paper and other topics were discussed at length.

The society is losing two of its members. Dr. M. L. Davis, of Caryville, is moving to Verda, Kentucky, with his bride. Dr. A. A. Baird, of Jacksboro, is moving to a community near Middlesboro, Kentucky.

(Signed)

R. J. BUCKMAN,

Secretary.

Five-County Medical Society:

Cumberland, Jackson, Overton, Putnam, and White Counties held their meeting, July 16, at Zollicoffer Clubhouse near Livingston.

The program consisted of a paper by Dr. A. F. Richards, of Sparta, entitled, "Ether Anesthesia," and a paper by Dr. Harlan Taylor, of Cookeville, entitled, "Acute Surgical Emergencies of the Abdomen." Other interesting matters were discussed. A sumptuous dinner which had been skillfully prepared by M. H. Hankins was enjoyed to the fullest extent. Twenty-two members were present and it was a most interesting gathering. All spoke in highest terms of the New Zollicoffer Park, including the clubhouse and lake, saying that it is the

most attractive resort of its character in the Upper Cumberland section. The next meeting, two months hence, will be held at Gainesboro.

Hamilton County:

Beginning in September the society will have regular weekly meetings every Thursday night. The following papers are scheduled:

September 3—"The Surgical Treatment of Goitre," by Dr. Cecil E. Newell. "Proctitis," by Dr. J. L. Cooley.

September 10—"Fulminating Infections," by Dr. Earl R. Campbell. "The History of Life Insurance Underwriting," by Dr. John B. Steele.

Hardin, Lawrence, Lewis, Perry and Wayne Counties:

The Five-County Medical Society met in Waynesboro on July 28. The following papers were read:

"Congenital Cystic Disease of the Lungs," by Dr. Leo C. Harris, Jr. Discussion by Drs. T. J. and C. C. Stockard, Lawrenceburg.

"Case Report of Agranulocytosis Angina," by Dr. C. C. Stockard, Lawrenceburg. Discussion by Dr. D. L. Wood, Waynesboro, and Dr. J. H. Tilley, Lawrenceburg.

"Some Points in the Diagnosis of Acute Abdominal Conditions," by Dr. H. H. Shoul-
ders, Nashville. General discussion.

Dr. and Mrs. C. V. Stephenson, of Centerville, will be the host and hostess to quite a number on August 28, which is the next regular meeting date, and the Five-County Medical Society will meet in Centerville on that date by special invitation of Dr. Stephenson.

Madison County:

On July 21 the Madison County Society held its annual picnic at Oak Park. Beginning at 4:00 p.m. the meeting continued into the night and every one present enjoyed the efforts of the program committee.

Rutherford County:

The Rutherford County and Stones River Academy of Medicine, which meets every second Wednesday at 12:30 as a luncheon

club, had as their guest speaker on July 8 Dr. William Britt Burns, of Memphis. His subject was "Cerebral Hemangioma" and report of a case, which was enjoyed by each of a representative membership.

The meeting for August 12 will have as a guest speaker Dr. W. S. Farmer of Central State Hospital, Nashville, Tennessee.

J. A. SCOTT, M.D.,

Secretary of Rutherford County and Stones River Academy of Medicine.

Washington County:

On August 13, the society met at the John Sevier Hotel, Johnson City.

Dr. G. E. Campbell—"Report of Unusual Eye Cases." Discussion by Drs. Jones and Lodge.

Dr. H. M. Cass—"Pyloric Obstruction." Discussion by Drs. Miller and West.

OTHER MEDICAL SOCIETIES

The twenty-first International Assembly of the Interstate Postgraduate Medical Association of North America, under the presidency of Dr. David Riesman, of Philadelphia, Pennsylvania, will be held in the public auditorium of St. Paul, Minnesota, October 12, 13, 14, 15, and 16 with preassembly clinics on Saturday, October 10, and postassembly clinics Saturday, October 17, in the hospitals of St. Paul.

The aim of the program committee, with Dr. George Crile as chairman, is to provide for the medical profession of North America an intensive postgraduate course covering the various branches of medical science. The program has been carefully arranged to meet the demands of the general practitioner as well as the specialist. Extreme care has been given in the selection of the contributors and the subjects of their contributions.

In cooperation with the Minnesota State Medical Association, the Ramsey County Medical Society will be host to the assembly and has arranged an excellent list of committees who will function throughout the assembly.

A most hearty invitation is extended to all members of the profession who are in

good standing in their state or provincial societies to be present and enjoy the hospitality of the medical profession of St. Paul. A registration fee of five dollars will admit each member of the medical profession in good standing to all the scientific and clinical sessions.

A list of the distinguished teachers and clinicians who will take part on the program may be found on page XVI.

Special railroad rates will be in effect.

For further information write Dr. W. B. Peck, Managing Director, Freeport, Illinois.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Rectal Administration of Evipal Soluble. James T. Gwathmey. The American Journal of Surgery, June, 1936.

Evipal soluble is a safe, reversible, and controllable preanesthetic medication. Because of its wide margin of safety evipal can be given intravenously for short operations without risk by those who understand thoroughly the signs of surgical anesthesia. However, metrazol or coramin as well as oxygen and carbon dioxide should be at hand.

Evipal soluble may also be given rectally in doses determined by age, body weight, and state of health. For minor operations this preanesthetic medication is sufficient. For major operations supplemental anesthesia is necessary such as inhalation, spinal or local. A series of cases proved the efficiency of this method. Dilaudid was found to be very useful in conjunction with this procedure.

Both laboratory and clinical experience demonstrate evipal rectally as a safe preanesthetic medication for the patient. Evipal may be given rectally when intravenous administration is contraindicated due to fear aroused in a nervous patient, and difficulty encountered in entering a vein in children and in the obese.

DERMATOLOGY

By E. E. BROWN, M.D.
Doctors Building, Nashville

Infantile Eczema. W. O. Colburn, M.D. Nebraska Medical Journal, January, 1935.

The author does not recommend cutaneous tests to arrive at the offending protein in infantile eczema. He considers the test very unreliable if the

child is under six months of age. He recommends desensitization by the subcutaneous injections of mother's milk. It is prepared by boiling in water bath for three minutes. The dosage starts with one minim and increases one minim every other day until the dose of four minims is reached. This is continued twice weekly, increasing one minim each dose for ten to fifteen doses, depending on results.

A Simplified Staining Method for Demonstrating Fungi in Scales and Hair. J. Alkiewica and W. Gorny. *Dermat. Wchnschr.*, August 24, 1935.

The authors found the following method satisfactory in staining fungi in scales and hair: The material is fixed and fastened to the slide by heating a few moments over a flame in a solution consisting of ten parts of a dilute solution of formaldehyde (4:10) and a hundred parts of alcohol. It is then stained in one part of cresyl violet (Grubler) and a hundred parts of 0.9 per cent solution of sodium chloride for about five seconds while being warmed gently. The preparation is then dried carefully with filter paper and mounted in oil of cloves.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 316 Doctors Building, Nashville

Duhrssen's Incisions: An Analysis of 592 Cases. Arthur B. Hunt and William B. McGee. *J. of Obs. and Gyn.* 31: 598, April, 1936.

Duhrssen's method is an incision in the effaced, but not completely dilated cervix to hasten dilatation in delivery. When urgent need for delivery is desired, after many hours of active labor and the cervix is the only obstructive factor, this type of operation is occasionally indicated. Indication in the individual case should be carefully made with relation to the time and placement. The author shows that good supportive therapy directed to evade exhaustion and dehydration will lessen the necessity for this radical procedure.

Placenta previa and dystocia are definite contraindications for Duhrssen's incisions. The procedure is not one to be contemplated at the onset of labor, but is occasionally the best available means of meeting an untoward or undesirable exigency. The operation is not without some small, but real danger to the mother of death from shock and hemorrhage. There were two deaths in this series of 592 cases where the procedure was directly responsible for the mother's exodus. A high morbidity may be expected from the nature of these cases. There were no deaths from puerperal sepsis in 624 cases.

Fetal mortality is high showing 10.3 per cent, however some evidence points toward the possible conservation of fetal life.

In a subsequent examination of 173 cases the cervix was found to be well healed in ninety-five

cases, poorly or not healed in eighteen cases, deep scars presented in thirty-three cases, and adhesions to the vaginal fornix in twenty-seven cases.

Follow-up care revealed many patients with troublesome leukorrhea. These cases are being followed until healing is complete, and the effort appears to be well expended.

A New Concept of Senile Vaginitis. John W. Simpson and Karl C. Mason. *Am. J. of Obs. and Gyn.* 32: 125, July, 1936.

Senile vaginitis is seen in elderly women either during or after menopause, but occurs in young women who have been castrated by surgery or radiation.

The patient complains of an irritating vaginal discharge with itching and tenderness of the vagina. Examination reveals a markedly inflamed vaginal outlet and the mucosa shows characteristic punctate excoriations appearing as bright red spots against a light red background.

Investigators have called attention to the importance of vitamin A in maintaining a healthy state of the vaginal epithelium in the monkey.

The authors present a study of thirty patients who were found to be suffering from senile vaginitis. The majority existed on diets quite low in vitamin A. The following treatment was prescribed. Cod-liver oil, 16 cc. b.i.d. for one week and then a maintenance dose of 4 cc. b.i.d. The average time for complete healing was six weeks, with a minimum of three and a maximum of four-weeks.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
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Epinephrine Bitartrate: Uses Other Than in the Treatment of Glaucoma. F. C. Cordes and D. O. Harrington. *Archives of Ophthalmology*, July, 1936.

Cordes and Harrington draw the following conclusions:

"Epinephrine bitartrate is a relatively little-used drug which deserves a prominent place in the ophthalmologic pharmacopeia.

"In addition to its action of lowering tension in chronic simple glaucoma, it has been found useful as a mydriatic for:

"1. Examination of the fundi in eyes with high normal tension.

"2. Examination of the fundi in glaucomatous eyes which are under the influence of a miotic.

"3. Powerfully dilating the pupil with the separation of posterior synechia in cases of old or neglected iritis.

"4. Dilating the pupil during the operation for congenital, soft, membranous, or traumatic cataract.

"The marked vasoconstrictive action of this drug, which exceeds that of adrenalin, makes it an ideal

hemostatic in the removal of chalazia, in cyclodiolysis, and in the operation for retinal detachment in which a dry field is essential to success."

OTOLOGY, LARYNGOLOGY, RHINOLOGY

By W. W. POTTER, M.D.
Medical Building, Knoxville

Treatment of Nasal Hemorrhages by the Use of Sclerosing Solutions. Lafayette P. Monson. Arch. Otolaryn., 23: 487, April, 1936.

Nasal hemorrhages and their causes and the common methods of control are reviewed by the author. He reports the use of sclerosing solutions in cases of various types of hypertrophy of the inferior turbinate in which other types of treatment had failed. He has had considerable success in the treatment of hemorrhages of the vascular region in the lower anterior portion of the septum by the use of sclerosing solutions. He proceeds as follows: After anesthesia and blanching of the part, small doses (approximately 0.1 cc.) of a saturated solution (16.6 per cent) of quinine lactate are injected into each of four or five points beneath the mucosa surrounding the bleeding point. The solution is injected into the extravascular tissues and not into the vessels themselves.

The small amount of bleeding that usually occurs at the site of each injection is controlled by inserting a pledget of cotton into the anterior nares. Cauterization of the ulcerated area is not necessary, as healing will usually occur in three to six days without further treatment. Only occasionally will it be necessary to repeat the procedure. This method is preferred by the author because, in addition to controlling the bleeding, the near-by vessels are destroyed by the action of the sclerosing solution, and the likelihood of future hemorrhages lessened or eliminated.

PEDIATRICS

By JOHN M. LEE, M.D.
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Immunization with B. Pertussis Vaccine (Progress Report). L. W. Sauer, M.D. The Journal of Pediatrics, July, 1936.

From his own records the author reports 2,474 children given pertussis vaccine for immunization. Of this number, 219 were exposed to and twenty-two acquired whooping cough. Six of those who had the disease were infants under two months of age who received only six cc. of the vaccine, the usual dose advocated being eight cc.

From reports from seventy-four physicians in twenty-four states, 9,291 children received the vaccine, 660 were exposed to pertussis and ninety-six had whooping cough. More than half of the cases occurred in children injected after they were three years of age, so the author now gives these older

patients ten cc. of vaccine (one, two, and two cc. bilaterally).

There are numerous details of manufacture and care of the vaccine that remain undetermined and are the subject of further study. Little is known of the influence of heat, interrupted refrigeration, and preservatives on the potency of the vaccine. Standardization of potency and methods of determining immunity require further study. Intimate exposure to early pertussis remains the ultimate test of immunity. For the best results, vigilance is necessary in the selection of strains and in the preparation, preservation, and administration of the vaccine.

ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.
Medical Arts Building, Chattanooga

A Comparison of the Results in a Series of Cases of Carcinoma of the Breast Treated by Postoperative Roentgen Therapy for Prophylaxis with a Similar Series in Which Operation Was the Only Treatment. U. V. Portmann. The American Journal of Cancer, Vol. XXVII, No. 1, May, 1936.

The average of the results of many surgical writers gives twenty-eight per cent of five-year survivals in carcinoma of the breast when treated with surgery alone. The wide variation in the results of different surgeons using acceptable methods must be attributed to different types of cases treated.

Various reports on series of cases, some treated by surgery alone and others by surgery and postoperative irradiation show wide variations in results and some writers conclude that postoperative irradiation did not add to the period of survival. Such conclusions are not justified.

To warrant any conclusions regarding results of treatment of carcinoma of the breast consideration should be given to (1) the time at which treatment was given; (2) the technique employed; (3) the reason for giving the treatment; (4) the type of growth treated.

Four hundred five cases are reported, all of which were operated upon by one surgeon, Dr. George Crile, between 1895 and 1921. In one series of 170 cases (forty-two per cent) operation was the only treatment. In the second series of 235 (fifty-eight per cent) in addition to operation they received irradiation at some time. Both series were classified into three groups.

Group I—Those having a tumor, apparently growing very slowly and measuring only a few centimeters in diameter, entirely confined to the mammary gland; the skin is not yet attached and the axillary nodes are few in number and are first discovered at operation.

Group II—Those with definitely growing tumors which, after remaining stationary for some time, begin to increase in size; the skin becomes adherent and nodes in the axilla are definitely demonstrable.

Group III—Those in whom a large part of the mammary gland has become involved, the tumor has involved the skin and underlying structures, and frequently the supraclavicular nodes are also involved.

Many of these cases were treated only for metastasis and by different radiologists using different techniques. Consequently for this comparison the cases operated upon by Dr. George Crile between June, 1922, and August, 1930, were selected for comparison with the group of nonirradiated cases. During the period there were ninety-nine cases who received postoperative irradiation for prophylaxis only, which have been followed over a five-year period or more.

All of the phases of the comparison of the two series cannot be given here. The outstanding observations and conclusions are as follows:

In group I, at the end of the five-year period 76.1 per cent of the nonirradiated patients and 80.8 per cent of the irradiated patients were surviving and were free of cancer. These results are not surprising since the patients in these groups had small localized carcinoma without demonstrable axillary metastasis and theoretically removal of the tumor should effect a cure. Only one case in this group was known to have died of carcinoma. This group constituted about twenty-five per cent of the total cases.

In group II at the end of the five-year period 43.5 per cent of the nonirradiated and sixty-two per cent of the irradiated survived and were free of cancer. At this same five-year period 43.4 per cent of the nonirradiated and 21.6 per cent of the irradiated cases had died of cancer. A detail analysis of the cases dying within this five-year period showed that cases in the irradiated group live on an average one year longer than cases in the nonirradiated group. This group, like the first group, constituted about twenty-five per cent of the irradiated cases.

In group III, which is composed of the most advanced cases, there were no five-year survivals free of carcinoma in either the irradiated or nonirradiated group. There were 2.4 per cent survivors in the irradiated group, but they all showed evidence of carcinoma at that time. None of the nonirradiated group survived at all at the five-year period. An analysis of the deaths during the five-year period showed that the average duration of life among the irradiated group was one year longer than among the nonirradiated group. This group constituted fifty per cent of the cases.

These findings indicate that in cases who do not survive the five-year period life is prolonged approximately one year by postoperative prophylactic roentgen irradiation, and that in group II a considerably larger percentage (18.5 per cent) of the patients reach the five-year period free of carcinoma in the irradiated group than in the nonirradiated group.

ABSTRACTOR'S NOTE: The conclusion might be drawn that cases in group I do not require post-

operative irradiation. This is true if one can be sure that the case belongs in group I. Since classification is difficult in many early cases it would seem wisest to give all cases postoperative irradiation.

A number of workers have published results in the past two years which would indicate that even better results are obtained when preoperative as well as postoperative irradiation is given and that no risk is incurred by the patient in delaying operation for as long as two months to permit thorough preoperative irradiation. It has also been shown that some types of advanced carcinoma are more effectively treated by irradiation alone than by either surgery alone or by a combination of the two, that is, the patient lives longer and is maintained in greater comfort. A cure cannot be expected in these advanced cases by any method of treatment.

SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.
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Prognosis in Gall Bladder Surgery. William D. Wilson, M.D., Rochester, Minn. Edwin P. Lehman, M.D., and William H. Goodwin, M.D., University of Virginia. *Journal A.M.A.*, June 27, 1936.

The author presents an analysis of 610 consecutive cases of cholecystitis and cholelithiasis with an attempt to assay the significance of results by the use of statistical formulas. The results were graded in four groups: (1) Excellent—free from all symptoms and in general good health. (2) Good—good health, mild digestive symptoms, but able to do ordinary work. (3) Fair—health fair, bothersome digestive symptoms as occasional pain, usually able to do ordinary work. (4) Poor—general health poor, frequent and marked indigestion, colic, hernia, unable to do ordinary work. The first two groups are considered as "satisfactory," and the last two as "unsatisfactory."

Clinical Data.—There were better ultimate results with increasing age from twenty-one to sixty years. Results were slightly better in females than in males. Satisfactory results were about equal in the white and Negro races. The final results were slightly better in cases where the symptoms were mild, but the operative mortality in the former was 4.5 per cent against 0.6 per cent in the latter.

Cholecystographic Data.—The cholecystographic diagnosis was pathologically correct in over ninety per cent of the cases. The ultimate results in cases of normal cholecystographic shadow operated are only fifty per cent satisfactory.

Pathological Data.—In the cases of acute and chronic cholecystitis with stones, the symptomatic results were about fifteen per cent better than in those without stones and the hospital mortality was about equal. In the cases of chronic cholecystitis alone the hospital mortality was higher in those

without stones than in those with stones. This does not include cases of common duct stone. About eighty per cent satisfactory symptomatic results may be expected where there is cholelithiasis or marked pathologic change is present.

Operative Data.—Many outstanding authorities advocate early operation in acute cholecystitis in preference to expectant treatment and the authors present statistical figures which support this view. In eleven cases where operation was done in the first forty-eight hours after the onset of symptoms there were no deaths as compared with a five per cent mortality in 138 cases in which operation was done later. The best ultimate results were apparently obtained from combined cholecystectomy and choledochostomy, but this group carried the highest mortality, 12.3 per cent.

SYPHILOLOGY

By G. CLARK, M.D.

Department of Public Health, Nashville

Syphilis in Pregnancy. Cole, Uselton, Moore, O'Leary, Stokes, Wile, Parran, and Vonderlehr. *Venereal Disease Information*, Vol. 17, No. 2, February, 1936.

The number of cases of fetal and neonatal deaths among syphilitic mothers is much greater than among nonsyphilitic mothers. In the patients of the obstetrical clinic at Western Reserve, pregnancy resulted in stillbirth four times as often in syphilitic as in nonsyphilitic women. Moore reports that an untreated syphilitic woman has only one chance in six of bearing a living healthy child as compared with three chances in four for a healthy woman.

The report shows the effect of treatment on the outcome of pregnancy in syphilitic women and shows that congenital syphilis is practically a preventable disease. Its prevention is dependent upon the routine, early and repeated use of the serologic blood test on every pregnant woman and upon adequate early treatment once the diagnosis of syphilis has been made. A positive blood reaction during pregnancy is a serious matter to the fetus. The pregnant syphilitic woman was found to tolerate antisiphilitic treatment as well as or better than the syphilitic woman who had not been pregnant since infection. Habitually aborting syphilitic women are capable of producing living, apparently nonsyphilitic children when given specific treatment throughout each pregnancy. Many more nonsyphilitic children were born when antisiphilitic treatment was begun before the fifth month of pregnancy than when therapy was delayed. This advantage was increased if the treatment during pregnancy was not only early, but adequate, that is, at least ten, preferably fifteen, injections of arsphenamine plus appropriate heavy metal. Treatment during a preceding pregnancy is insufficient protection for the present pregnancy even though the syphilitic woman has a negative blood reaction.

It is necessary to treat her throughout each pregnancy to insure a living, nonsyphilitic infant.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.

By G. A. WILLIAMSON, JR., M.D.

Medical Building, Knoxville

The Surgical Treatment of Hyperparathyroidism. Edward D. Churchill and Oliver Cope. *Annals of Surgery*, July, 1936.

The removal of parathyroid tissue is based upon the assumption increased function is producing disease. In any particular case three lines of evidence test the soundness of this assumption.

At the present time, the only certain criterion upon which a diagnosis of hyperparathyroidism may be affirmed is a demonstration of a disturbance in calcium and phosphorus metabolism.

Although certain manifestations of the disease are of a nonreversible order (bone cysts or renal calcification) removal of parathyroid tissue is followed by a change of the pathologic state toward normal, and the change in metabolism following operation is striking and unmistakable.

Requisite findings in every case are definite structural changes in parathyroid correlated with the disturbance of function.

There must be a positive diagnosis for successful surgery. Since the laboratory findings are more exact than the dissection of the surgeon, there is no reason for exploratory surgery in this field. The demonstration of four normal parathyroid bodies is not enough, as an undiscovered adenoma in a fifth gland may lie in some inaccessible region of the mediastinum. If a tumor is not found after a skillful and diligent search, the operator is privileged to say the tumor cannot be found, but not, "the tumor does not exist."

The surgeon must be convinced of the correct diagnosis before operation, either by implicit confidence in his medical colleagues, but preferably by a firsthand weighing of the evidence.

Renal calculus is very often the presenting clinical manifestation of the disease.

In a patient with renal stone and hyperparathyroidism, which would take precedence in surgical therapeutics? This problem can only be solved by increased experience. The tendency at present is to disregard the parathyroid disturbance until the kidney problem has been settled. If a calculus is blocking the ureter this is correct. On the other hand, in cases of severe hyperparathyroidism, many sequelae of renal surgery may be poorly tolerated. The only answer now is that the urologist must consider the disease as a whole and not endanger the patient by nearsighted surgery.

Although skeletal changes in this disease are painful, the real hazard is the damage done to the kidneys. Renal insufficiency or complications of renal calculus have been the only causes of death in their series. They feel that a diet high in cal-

cium and phosphorus is not only inadequate, but positively dangerous.

An approximate description of a normal gland in a normal person is from 3 to 6 mm. in length, 2 to 4 mm. in width, and 0.5 mm. in thickness.

A parathyroid body tends to conform in shape to immediately adjacent structures. They give the cell structure in detail.

Finding normal parathyroid bodies will always be difficult and uncertain, and recognition when exposed should be precise and certain. There is no short cut in experience necessary for precision. In any operation, these glands must be recognized and preserved with their blood supply intact. They know of no reason for removal of a normal parathyroid body. If any doubt exists about the gland being normal, biopsy with a sharp scalpel is permissible, and tissue immediately studied by frozen section.

Gross pathologic changes are apparent, and changes in the gland are described.

Two major types of pathologic findings occur, adenoma and hyperplasia. Case reports are given for both types.

The operative technic is described in detail. The incidence of multiple tumors in a series of thirty cases is 6.6 per cent, and their procedure is to stop the dissection when a definite adenoma is found. They have not encountered a parathyroid tumor or a normal gland lying entirely within the substance of the thyroid gland in their series.

Even leaving intact parathyroid tissue does not obviate the danger of tetany. Severe tetany is a hazard to the patient's life, and mild tetany is distressing to the patient.

Bone decalcification of the bones may or may not be adequately shown in roentgenograms.

The preoperative level of serum calcium cannot be taken as an indication of predisposition to tetany. If severe tetany is to occur, the signs will be noticeable in forty-eight hours after operation.

A summary of the indications for conservative surgery to avoid tetany is given. Preoperative and postoperative treatment is also given.

BOOK REVIEW

The New American Medical Directory. Reprinted from the Editorial Department of The Journal of the American Medical Association, July 18, 1936, Vol. 107, pp. 214 and 215.

The fourteenth edition of the American Medical Directory has been completed and copies are now available for general distribution.

The directory, with nearly twenty-five hundred pages, is a vast storehouse of information. It contains not only the most complete list available

of the physicians of the United States and its dependencies and of Canada, but much additional data which hospitals, libraries, and various other institutions, as well as individuals, will find useful and readily available. The directory is the only nation-wide register of physicians in which the extensive data on medical education, licensure, and society affiliations have been verified.

The 1936 edition contains 183,312 names, or 4,796 more than were in the previous edition issued in 1934. The names of 13,157 physicians have been added and 7,684 names have been removed because of death. More than 70,000 changes of address have been made, in addition to thousands of changes in society affiliations, teaching positions, specialties and office hours.

In this edition, thirty-two states show an increase in the number of physicians; New York leads the list with 1,201, followed by California (369), Pennsylvania (281), New Jersey (262), and Massachusetts (249). A slight decrease in the number of physicians is shown in Missouri, Georgia, Kentucky, Tennessee, Oklahoma, Alabama, Indiana, South Dakota, Maine, Vermont, Mississippi, and New Hampshire. When the thousands of changes of location are analyzed they seem to show a noticeable migration of physicians to the larger towns in the South Central states, a trend that was previously present also in some other sections of the country.

The first section of 221 pages in the new directory includes the constitution and by-laws of the American Medical Association, the Principles of Medical Ethics, and a list of meeting places of the annual sessions of the association since the first one in 1847, with the names of the president installed during each meeting. In this section also are lists of the hospitals that are approved for intern training, the medical libraries, the medical journals published in the United States, Canada, the Philippine Islands and Puerto Rico, the names of medical officers of the various government services, the national organizations for the various specialties with the names of their members, the membership of the new examining boards for the specialties, the medical schools in the United States and Canada with a brief history of each, and the members of the National Board of Medical Examiners.

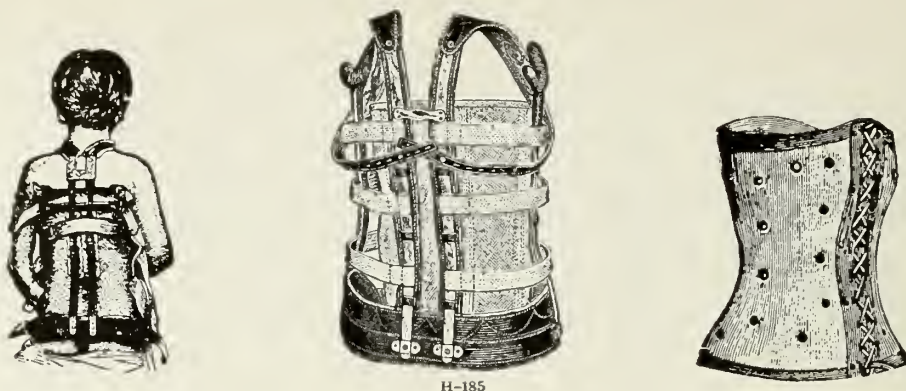
The second section is arranged by states. There is published under each state the medical practice act, the members of the board of medical examiners, members of the state board of health, county and city health officers, and officers of the state, district and county medical societies. Following this is a list of 7,220 hospitals, sanatoriums and related institutions arranged by towns, with the name, location, bed capacity, superintendent, and type of patients treated in each institution. Then, arranged by towns, comes the great list of physicians, giving the year of birth, school, year of graduation, and license to practice, membership in the state society and special societies, professor-

ships, and Fellowship in the American Medical Association. The home and office addresses and office hours also are given for physicians in towns of more than 10,000 population.

A new feature in this edition is a key letter showing that a physician has been certified as a specialist by an approved examining board. Several of these boards have been approved by the Council on Medical Education and Hospitals since the directory went to press. The next edition therefore will contain a more complete list of certified specialists. An especially interesting feature of the 1936 edition is the list of American physicians temporarily located in foreign countries.

The third section, of 525 pages, is an alphabetical index of the names of 183,312 physicians; and practically every name is followed by the name of the city and state, thus indicating where in the directory detailed information about the individual physician may be found.

The bringing to completion of the fourteenth edition of the American Medical Directory has been a monumental task, in the pursuance of which thousands of individuals, societies, licensing boards, medical colleges, and other organizations have co-operated. For their ready cooperation and assistance the American Medical Association is thankful and deeply appreciative.



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"A STUDY OF TOXAEMIAS OF LATE PREGNANCY"*

E. G. WOOD, M.D., Knoxville

THE TERM "Toxaemias of Pregnancy" embraces many symptoms, syndromes, or diseases, and includes hyperemesis gravidarum, excessive salivation, chorea, neuralgia, peripheral neuritis, tetany, impetigo herpetiformis, accidental hemorrhage, acute yellow atrophy of the liver, severe anemia of the pernicious type, the kidney of pregnancy, and eclampsia. Some of these manifestations are peculiar to pregnancy, but by far the greater number are not. There is no analogy for the assumption that any one toxin could cause such a variety of symptoms.

The "late" toxæmic manifestations exclude those arising before the twenty-eighth week of pregnancy, thus partially overcoming the difficulty of differentiating them from cases of chronic nephritis complicating pregnancy, in the large majority of which symptoms will have arisen earlier. They do however form a group of disorders whose right to such a title, though justified on pathological grounds, has never been proved by the discovery of any definite toxin or toxins. Hence, dependence for a definition of the conditions must be placed on their clinical features, of which a true albuminuria and raised blood pressure are the most consistently present. Associated therewith are others, such as edema, headache, vomiting, insomnia, cramps, polyneuritis, jaundice, and ante-partum bleeding, in

varying degrees of prominence and frequency. Albuminuria, for example, even of proved renal origin, may mean much or little, and sometimes is late in appearance or even absent.

Theobald¹ says that "it is because the hepatic lesions which are frequently associated with eclampsia are so striking and occur in no other disease that the majority of authors have maintained that they can be explained only on the assumption that some peculiar toxin is elaborated in the products of conception." Yet similar lesions have been produced in animals experimentally by feeding them on a lean meat diet or raising the intra-abdominal pressure. It has been suggested that not only eclamptic convulsions, but the pains associated with obstructed labors, and possibly even with normal labor, might cause hemorrhagic necrosis in the periphery of the lobules of the liver.

Bevil² states that it is his belief that endocrine dysfunction is the essential cause of late toxæmias of "pregnancy and offers the following explanation": "Excessive secretions of the pituitary, thyroid, adrenal, and pancreatic glands will produce toxic symptoms, all glands hypersecrete from stimulation." Pregnancy stimulates every gland and tissue of the body. It seems reasonable to suppose that an excess secretion of the pituitary gland might affect the striated muscle fibers as well as producing contractions of the unstriated muscles, also there has been discovered in the urine of

*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1936.

the pregnant woman another pressor substance. An increased production of thyroxin may increase blood pressure and pulse rate as well as be toxic to the nervous system. An excess secretion of insulin will certainly produce a hypoglycemia and Titus has claimed such a state exists in eclampsia, others, however, deny this, suffice it to say, altered physiology or dysfunction is receiving more consideration today than formerly.

The vascular aspect of eclampsia has been further studied and reported by Irving³ in that eclampsia and its precursor, pre-eclampsia, is not a disease primarily of the liver, or of the kidneys, or indeed of any individual organ, but an affection of all the small terminal arterioles. He further supports his views by pathological studies of the vessels of the kidneys, which show a definite thickening of the arterial wall.

As to classification of the late toxæmias of pregnancy that by Stander is probably accepted as by far the simpler and most explanatory, as there is no sharp dividing line between the various types.

1. Eclampsia.
2. Pre-eclampsia (similar to No. 1 except for absence of coma or convulsions).
3. Chronic nephritis.
4. Eclampsia superimposed upon nephritis.
5. Low reserve kidney.

The symptoms of toxæmia may briefly be mentioned in the following order as they first present themselves and as to their progressiveness if not altered: edema of the ankles, dirty toxic skin, slight rise of blood pressure, albuminuria, dull headaches, nausea, epigastric pain and vomiting, blood pressure 160/100, anasarca, blurred vision, amaurosis, convulsions, and coma. Blood chemistry levels with the exception of blood sugar have been of very little importance except to designate as nephritis those cases which clearly fall into that class either as pre-existing Bright's disease, or as the latent condition aggravated by the metabolic load of pregnancy. The marked retention of sodium is probably the most significant chemical finding. Of the above groups the two about which there is the most difficulty are the chronic nephritic and the low reserve kidney groups. In the chronic ne-

phritic group are included those cases who show a rise in blood pressure and albumin early in pregnancy, and usually more difficulty in the present pregnancy than in the previous ones. Absence of albuminuria, edema, symptoms, and signs of decreased kidney function in the presence of hypertension does not speak against underlying nephritis.

In the low reserve kidney there has been previous damage by pregnancy, exanthemata, acute infectious disease or focal infection. While in health or minor illness these kidneys may function satisfactorily, with the exception of a slight increased blood pressure, it is quite a different story when the burden of pregnancy and the excretion of increased metabolic products are added. Herein early attention to treatment such as proper diet, hygienic care, and removal of focal infection demand our attention. Many of these patients can have diseased foci removed in early pregnancy and go to term more or less undisturbed.

What is the picture of the pre-eclamptic patient? Here is one that has been previously well and seemingly undisturbed up to within say two or three months before expected delivery, even in some extreme cases as near or not more than within two weeks of full term, sudden edema of ankles, increased blood pressure and albuminuria. To these may be added the symptoms gradually of impending eclampsia. However, these symptoms by active treatment can usually be controlled, and the patient carried on to term, but not always, and a true eclampsia may ensue, with the following, a profound toxæmia manifested by convulsions. Blood pressure herein may be over 250 and very little or much albumin in the urine, partial blindness, orthopnea, and increased pulse rate. These are the type of patients who come or are brought in to you who have had no prenatal care.

Again there must be distinguished the picture as presented in the so-called nephritic eclamptic as compared with that of the hepatic type. In the former (nephritic) the patient presents much anasarca, a pale anemic appearance (typical of kidney retention products), disturbed vision, at times amaurosis, a systolic pressure of 160 or

more, a diastolic above 100 (and an elevated diastolic pressure is always of more significance than the increased systolic), and a urine heavy with albumin.

Contrasting above in the hepatic type not so much swelling, color more significant of suprarenal glandular disturbance, less albumin in the urine, epigastric distress more severe, vision less markedly disturbed, but a higher blood pressure, and, as a rule, a much more malignant condition. The prognosis of these eclamptics depends largely on the number and frequency of the convulsions and their sequelae. Deep coma, high fever and a rapid pulse rate, being associated with successive and severe convulsions, make the outlook grave. Jaundice is also of bad prognosis. The best omen after cessation of convulsions are early return of consciousness, fall of pulse rate, and increased excretion of urine, and within one week urine that has boiled almost solid may show only traces of protein. Bevil estimates that at least thirty-three per cent of all women who have toxæmia of pregnancy later show evidence of damaged kidneys, and that if a patient has toxæmia during a second pregnancy it is evident that there is permanent damage to the kidneys. Chronic nephritic patients are always poor obstetric risks and each succeeding pregnancy is almost sure to shorten their lives. Stander states that he is very radical in cases of low reserve kidney and chronic nephritis, sterilizing all patients who will agree to have the operation performed. Chronic nephritis in the pregnant mother is treated as it would be in the non-pregnant, but when it does not respond and blood pressure and body weight increase too rapidly it is time to interrupt the pregnancy, possibly by section and a sterilization at this time.

Ross has called attention to the relation of vitamin deficiency to the toxæmia of pregnancy, and has been impressed with the numbers of patients in eclampsia who are in a very poor state of nutrition and cites statistics to show that where a large number of eclamptics are found, you will also find an increase in the number of cases of pellagra and deficiency diseases. It is certainly proven beyond the shadow of a doubt

that dietary deficiencies can account for both hypochromic and macrocytic anemias of pregnancy, as well as polyneuritis of pregnancy. Furthermore, many of the patients with neuritis had extreme cases of vomiting in the early pregnancy.

In 1922 the physiological requirements of the pregnant mother were thus summarized by Marshall: "The dietary condition which must be observed more particularly is an abundant supply of: first, carbohydrates; secondly, calcium; and third, vitamins." This statement expresses the focal point about which discussion revolves today, for dietary systems occupy the most prominent part in the prophylaxis of pregnancy toxæmias. Claims are advanced for fruitarian, flesh-free, and salt-free diets, for a high vitamin content and additional supplies of certain mineral salts, such as those of calcium, phosphorus, iodine, and iron, but based more on the theories of the cause of the disorders they are intended to avoid than proof of their efficiency by clinical observation. Theobald adheres to a diet that includes two pints of milk daily, a tablespoonful of cod-liver oil or its equivalent, with butter, fruit, and green vegetables. It is known that the need of calcium is especially called for in the last two months of pregnancy; but the problem is rather that of discovering the form in which it is not only assimilated, but also made readily available. If the required amount for maternal reserve in late pregnancy does not appear to be furnished from the milk, butter, and cheese then we have a most suitable form in calcium gluconate.

To lessen the risks of acidosis, it is well to remember, especially if a long labor is anticipated, to increase the intake of carbohydrates during the last few weeks of pregnancy. Full attention to personal hygiene and regular evacuation of bowels, and avoidance of sudden changes in temperature for those who have suffered from chronic nephritis, avoiding crowded assemblies where chance infections are readily picked up.

Prevention of complications entails, first, the frequent examination of all expectant mothers, next, the thorough investigation of all cases exhibiting symptoms or signs that

may be regarded as evidence of a toxæmic condition, and, finally, the prompt treatment of those falling into this category by dietetic measures as already indicated, and the administration of magnesium sulphate and alkalis. Keep the woman in bed to lower body metabolism for the duration of observation determined by the history and progress of the case. Distinct improvement with treatment naturally affords sound reason for continuance, while its absence, and, still more, increasing gravity, indicates termination of the pregnancy before more serious consequences result. If, in spite of these measures, the blood pressure continues to rise, albumin increases, and there is headache with blurred vision, delivery should be accomplished by the least shocking method in that particular case, for every case must be a law unto itself. Remember this always, that any toxæmia in the latter half of pregnancy that does not respond to good conservative treatment is gradually producing certain pathological changes. The longer the case is protracted the more tissue is damaged. These changes affect every organ in the body, especially the kidneys, liver, and brain, and in some measures are a menace to future health.

Eclampsia is the most serious form of all toxæmias. It would take a volume to review the information given on this one subject alone. We all treat it by methods of elimination and the administration of sedatives in all their permutations and combinations, but we must remember that the prevention is our chief aim. Radical surgical procedures should be reserved for the unusual cases with complications which themselves afford indications for operative delivery, and the regular treatment for eclampsia should be conservative. This conservative treatment should include the following principles:

1. The reduction of the products of protein metabolism in order to spare the kidneys.

2. The rapid elimination of the toxic elements circulating in the blood in order to reduce the damage to the brain, heart, and liver.

3. The administration of carbohydrates

to replenish depleted stores of glycogen in the liver.

4. The protection of patients from injury during unconscious periods.

5. The support of the cardiac and respiratory centers until the peak of the intoxication is passed.

6. The emptying of the uterus if the patient's condition does not improve under active treatment.

The intravenous use of magnesium sulphate has undoubtedly proven to be a very valuable adjunct in the commonly accepted conservative treatment of toxæmia and is spoken of by McNeil as "a sedative, dehydration therapy," which clinically will cause considerable reduction of blood pressure, reduce edema, increase urinary output, and reduce or control convulsions, and certainly other symptoms. The magnesium ion is supposed to be a nerve sedative and the sulphate radical a diuretic. Although twenty cubic centimeters of the ten per cent solution can be given to control the convulsions, I yet give it with some apprehension, because of some danger of collapse, nausea, and cyanosis. You have all observed the edema of the lungs in a fatal eclampsia, and collapse and cyanosis certainly can increase edema of the lungs.

One would not fail to mention the Stroganoff treatment of eclampsia, wherein the administration of morphine, together with chloral, controls the convulsions and increases the carbon dioxide of the serum and alveolar air. However the use of chloroform cannot be justified in view of the present knowledge that it produces central necrosis of the liver lobules.

Also one would not fail to pay their respects to the wonderful work of McCord and a study of his statistics of eclampsia among the colored. He is a strong advocate of morphine and intravenous administration of fifty per cent glucose, fifty cubic centimeters every four to six hours until labor sets in and this usually within six to twenty-four hours. He replaces morphine later with sodium amytal or some other of the barbiturates. Regardless of the controversy as to the exact interpretation of clinical and laboratory data, the use of carbohydrates in the treatment of toxæmia of

pregnancy has been the basis for the successful treatment of many severely sick patients. The favorable effect of maintaining a proper water balance in toxic patients is generally recognized as a further adjunct in the successful conservative treatment.

Lastly, in closing I want to recommend briefly the following: magnesium sulphate intravenously, morphine, or sodium amytal or all and the latter intravenously if not able to control the convulsions by intramuscular route, repeated as often as needs be to control convulsions; a quiet darkened room; gastric lavage; enemata; administration of glucose; and hot packs followed by external heat to produce sweating.

If coma deepens, pulse rate increases above 120, or temperature above 102 Fahrenheit, then conservative treatment should be abandoned and radical measures according to the individual case should be carried out at once, preferably by delivery by normal route if possible, if not by classical or low Caesarean section.

DISCUSSION

DR. EDWARD F. BUCHNER (Chattanooga): Mr. President, Members of the Association, Ladies and Gentlemen: We are very fortunate in having heard this fine study of the toxemias of late pregnancy by Dr. E. G. Wood. His paper deals with one of the most important and difficult problems in obstetrics and, accordingly, is of general interest to the majority of us here. Any physician doing even a limited amount of obstetrics in the course of his practice will undoubtedly encounter a certain number of toxemias. The incidence of toxemia is generally accepted as approximately fifteen per cent of all pregnancies and the situations encountered are of such a serious nature, accounting for nearly one-third of our maternal mortality, that it behooves us all to understand these problems clearly.

Our first and perhaps greatest difficulty in this respect arises from the fact that the etiology of the toxemia of pregnancy is absolutely unknown. Our terminology and general use of the word toxemia here is not entirely satisfactory, but must continue in general usage until some one can propose a better term. The terminal pathological findings, although well recognized, are frequently improperly correlated with possible causes and symptoms. In other words, we are very prone to confusion on this subject and will continue to be so as long as the etiology is unknown, the terminology misleading and the pathological findings improperly correlated.

As the essayist has shown, Stander's classification of the various forms of the late toxemias is now widely accepted. Although the margins be-

tween Stander's groups are not always easy to distinguish in certain instances, nevertheless our present clinical and laboratory procedures are reasonably accurate when thoroughly and carefully done. Our most frequent oversight in the rush of everyday practice is the failure to use every method of examination that will help us to classify our toxemias more accurately. Let us remember that the proper classification of any of these toxemias will indicate the proper treatment and prognosis, as we now understand it.

The management and therapy of the toxemias of late pregnancy is empiric and has been influenced by the innumerable theories of its causation. Countless numbers of medicines, drugs and minerals, specialized dietary regimes and endocrine preparations have been advocated and used with varying results. The current literature suggests that we may consider all of the toxemias of late pregnancy as of either a chronic or an acute nature. In the chronic toxemias we are apparently doing our best when we do not evaluate the life of the child too highly and sterilize to prevent the aggravation of subsequent pregnancies. In the acute toxemias the more conservative measures are best. Prevention as provided by prenatal care, the modified Stroganoff treatment, quiet and rest, morphine, the barbiturates, glucose, and magnesium sulphate, together with the induction of labor, offer better results than any other method reported in the larger clinics. Radical surgical delivery has indeed a very limited field here and is of value only in that small group of acute cases that does not improve under conservative treatment. Furthermore, we must remember that every acute toxemia may subside only to become a chronic one later and should be treated as such.

This is indeed an enormous and difficult field, the problem is met frequently and the results are often disastrous. The current literature is full and varied, offering much food for thought and serious study. We are all indebted to Dr. Wood for bringing this subject before us and I wish personally to thank him for his detailed discussion.

DR. J. R. REINBERGER (Memphis): I certainly enjoyed the very concise presentation that was given by Dr. Wood. I am mighty sorry that Dr. Buchner, a friend of mine, was not here to enter actively into the discussion.

The discussion of the etiology and treatment of all toxemias has been a controversial one for many years, and not too much time can be consumed in the discussion of either phase that is relative to the etiology or the treatment.

Dr. Russell and I recently completed a nineteen-year study of our toxemic groups in the eclamptic type, presented before the Southern Medical in St. Louis last November. Coincidental with this study of 232 cases of eclamptics, we are just about to present some 1,500 cases of toxemias of various groups. The ability to place various types of toxemic cases into definite clinical entities of course

has overshadowed the real problem at hand, and while the scientific approach is perfect we feel fairly confident here that much time has been lost in the active treatment of those cases because of the inability to place them into definite clinical groups. For the past five years in our department we have simplified our classification, with nothing new added because of the unknown etiology, the general pathology which is found throughout the body, namely, one or two systems are more often affected, the nervous system, the liver, the kidney, the brain, the blood vessels, etc., and we found that our only approach was a simplification of the problem to teach medical students so they would be looking for one thing.

This is the classification that we use, which is no different from Dr. Wood's except in the matter mainly of presentation. This is one of our slides: No specific cause as yet has been discovered, but unquestionably it is a circulating toxin with no predilection for any one system, but more often affects two or more. The symptoms depend upon which system is affected. The simple teaching that the various toxemic groups are one and the same, varying only in the extent of the lesion, simplifies the understanding for the prevention and treatment.

These would be groups A, B, C, D, and E. From the standpoint of teaching and by contrast to Stander's classification, which is a good one, we say that low kidney reserve is comparable to incipient toxemia, that pre-eclampsia is comparable to a moderate toxemia, that group three or eclampsia is comparable to a severe toxemia, and that group four is a chronic nephritis or a pregnancy with a chronic nephritis; and last, a benign hypertension group which probably will not hold because the only manifestation that the patient has is an elevated blood pressure, and shortly after delivery the blood pressure returns to normal, therefore it is not comparable to hypertension.

First, the elevation of the blood pressure. We realize that the blood pressure is normally lower than that of the nonpregnant woman, 90/60; therefore a patient having a blood pressure elevated to 130/60 is an incipient toxemia; 140 to 150, a potential toxemia; and if it is higher she is in a grave condition.

The second thing is that we feel increase in weight is significant, and when a patient gains over twenty-five pounds for the entire time, she is toxic; if she gains over eight pounds in any one month she is a potentially toxic case.

Third, nervous irritability is more important in the actual diagnosis of toxemias than either weight or urinary findings. I mean the transient headaches with occasional dizziness, etc. The point I want to make is that urinary findings are of no value relative to the early diagnosis of toxemia; if present, they are indicative, but we feel if we wait for albumin our case has gone too far and that we are sitting on top of a volcano and we are liable

to have a convulsion. Blood chemistry is of no value.

Relative to the symptomatology, one can readily see when teaching medical students that if they view the problem as one problem, eliminating chronic nephritis, and teaching that the symptoms or the cause of the symptomatology are in relation to the pathology present in the patient, the medical student immediately can go out and see that he can group his cases, and that is the reason I say we will be in a position very shortly to give about 1,500 cases that prior to the use of this classification both our staff men and our medical students always missed out on in group one.

The recognition of group one will ultimately lower the number of group two. The drastic treatment of group two will unquestionably eliminate group three, and in the final analysis, so far as I can see it, the chapters in textbooks teaching obstetrics will have to be modified particularly with reference to symptomatology if we are going to eliminate our eclamptic group from our maternal death causes.

DR. W. S. NASH (Knoxville): Having been engaged in the practice of medicine for forty-eight years, and during that time having seen a great many women in a state of pregnancy; having operated on a good many women suffering from eclampsia, during that long period of time, I have drawn some pretty good inferences.

I like the doctor's classification as it is on the board, but he has got too much classification. I saw a fellow trying to whip a dog once, and he had a whip twenty-five feet long. He would have done pretty well if he had had a whip twenty-four or thirty inches long, but who could handle a whip twenty-five feet long? It is all summed up in the first three, and I see nothing more. In the others you are dealing with old pathology. When I look back upon my obstetrical life any time I see three particular symptoms I look at is as a thunderstorm in the distance, but if there is a fourth symptom I look upon it as having a hurricane propensity, and if it is put down in the third classification as I see it there, I say we are in the midst of an awful clinical tornado. There never was anything on earth, no matter what, in the realm of the practice of medicine and surgery that beats the picture that a man can draw of puerperal eclampsia, and a man who waits for his knowledge—at this point—has no business whatsoever in the medical profession. A great many of these young men have seen only hospital obstetrics, the poorest form of obstetrics that was ever practiced. There is that classical knowledge which I admit must come to students, but if they want to know about obstetrics, let them go to a medical meeting of the county society, the eastern, the western, the middle division society, or the state society and talk to men who have labored long at the bedside.

There are just a few things about eclampsia that should be hung upon the pegs of your memory

and should forever stay there. The patient's own mistreatment of herself should be thoroughly inquired into. Whether she has had professional care of any kind should be inquired into; the general appearance of things, the general surroundings, the general demeanor of the patient herself, will fall into two classes—the doctor from Memphis did not tell you that. There is the rotund or the overrobust in her first or second delivery; then there is that emaciated, wan, and poorly-nourished woman who may come in a different class entirely, and yet both of them show a high blood pressure. Now, buddies, you might just as well make up your mind that you are up against a proposition; you might as well accept it right there just as though she were in a state of eclampsia (she is in eclampsia); she is just not throwing the convulsions; she is in the eclamptic state. When you find her there, relief must be speedy and must be certain. The man who twiddles, the man who doubts, the man who has to have a consultation, has no business at such a bedside.

I have been with them when I would have to jump astride them, take a knife and cut the vein in the arm and let out the blood, and I was not ashamed of it. I have had to do a Caesarean section with nobody present but a common, everyday nurse—what you would call a “spirits” nurse. But it has to be done. Then if you have got the guts to give them sodium glucose and five cubic centimeters of a saturate magnesium sulphate into the vein every four hours (forget about the other things), they will most all get well.

DR. P. B. RUSSELL, JR. (Memphis): I have enjoyed the discussion very much and I certainly enjoyed Dr. Wood's paper. I may not be quite of age, so to speak, according to the classification, but I am well past my teens. The young men, I might mention for the benefit of those of us who do not understand these things about the young men, have to go out to attend patients in labor in the home here, as in other universities. I have attended patients in labor in the homes while at the Chicago Lying-In Dispensary, in New York, Baltimore, and here in Memphis, so I think that I am in a position to state that these men see other than hospital cases.

One method of medication is no better than the other in the care of a patient with eclampsia. You may use your Stroganoff, your Stander, or what not. The important points are: the question of posture, elevation of the feet to prevent aspiration; control of the convulsions by some method; and elimination, of course, is important. Of late, we have discarded colonic irrigation because we feel it has no particular value. Naturally, you must keep up the fluids if you are going to have elimination. You must sustain the heart, relieve pulmonary edema and cyanosis. We try to relieve the cyanosis by the constant administration of

oxygen, as well as atrophine in large doses, which, as we all know, will stimulate the heart.

After we have the convulsive seizure controlled, the question arises, what must we do? If the patient has a closed or partially dilated cervix, certainly there is indicated a Caesarean section, and do it under a local anesthetic. If you give these patients a general anesthetic you will lose them nine times out of ten, because usually, in fact nearly always, there is edema of the lungs and you are simply adding insult to injury.

If you have a complete dilatation of the cervix you can deliver that patient by means of forceps, whether it be mid or low, or if it is expedient you can do a version if necessary. There is one method I would like to mention in connection with this, and that is the matter of nerve block of the pudendal nerves and the urogenital branches which fan out over the perineum and vulva. You can do even a mid-forceps operation without a particle of trouble with the nerve block method if one uses a slightly beveled needle.

The temperature, as we have found, is of no great value. I would like to stress that we have found the number of convulsions were of little value in the prognosis, but the number of elapsed hours after onset was of the greatest import.

This slide is a graph of a patient who came to the Memphis General Hospital, eclamptic; gravid one, Negress, nineteen years old, nonclinic. Operation was delayed and the patient died. Now why?

Let us follow this through. You will notice that there was no cyanosis until 1:15 p.m. The onset was at 3:00 a.m. that morning so there had been a ten-hour duration of the eclampsia before the patient was delivered.

We have stressed that as long as the patient is improving let her alone, but if you have a diastolic rise of the blood pressure, along with an increase in the pulse rate, increased respiratory rate, cyanosis increasing, edema of the lungs present, then that patient should no longer be allowed to linger, but she should be emptied by the most expedient measure.

You can recognize the signs of the “break”—a sudden increase in the pulse, the respiratory rate was increased, the systolic pressure was about the same, but the diastolic increased slightly after some improvement. The operation was delayed; the patient died. That is the picture so many times. Here we are not dealing with the private patient. We seldom see this in private cases because we recognize the toxemia in pregnancy. This patient came in from up the country a way, she had a long trip to Memphis, and we found her in this condition.

DR. E. G. WOOD (Knoxville): I brought this paper here not as an obstetrician, but simply as one seeing some of these cases from time to time and doing a certain amount of obstetrical work.

Many of these cases are referred cases that have come to you without prenatal care. Most of the cases we have presented were these desperate pictures from that classification.

In presenting this there were two things uppermost in my mind. It is you men in this audience who still do, I should say, the major portion of deliveries in this country, and we want to impress

upon you the one thought of prevention and a better study of prenatal care and eclampsia.

The other thing I want to leave with you gentlemen is that you let every case be a law unto itself and do in that particular case what in your best judgment is demanded. You cannot treat them all alike; you cannot get the same results with one routine treatment.

HYPERPARATHYROIDISM WITH RENAL CALCULUS*

SAMUEL S. RIVEN, M.D., AND MORTON F. MASON, PH.D., Nashville**

HYPERPARATHYROIDISM is caused by an oversecretion of the hormone of the parathyroid gland which leads to decalcification of bone, increased calcium in the blood serum, increased calcium and phosphorus excretion in the urine, and diminution of inorganic phosphorus in the blood serum. It is usually due to one or more actively functioning adenomata or hyperplasia of the parathyroids. The question of the origin of parathyroid tumors is the subject of extensive research. Wilder and Howell¹ in a recent communication have indicated that deficiency of vitamin D is a factor in the production of parathyroid adenomata and compare it to the deficiency of iodine in the production of adenoma of the thyroid. Here as in the thyroid "there must also be present cells that preserve in adult life an embryonic capacity for proliferation."

The principal types of hyperparathyroidism have been classified by Albright, Aub, and Bauer² as follows:

(1) Classic hyperparathyroidism (Von Recklinghausen's disease). Skeletal symptoms predominate and consist of decalcification, cysts, tumors, and eventually fractures. (2) Osteoporotic type of hyperparathyroidism. Presenting symptoms are due to general decalcification, and here there are no cysts or tumors. (3) Hyperparathyroidism with nephrolithiasis. Presenting symptoms are associated with renal stones and with no gross skeletal changes. (4) Hyperparathyroidism with renal insufficiency (nephrocalcinism). The symptoms are those of Bright's disease. (5) Acute parathyroid poisoning. This is a condition simulating acute poisoning with parathyroid extract in dogs with sudden death and characteristic pathologic changes. (6) Hyperparathyroidism simulating, or complicated by, Paget's disease.

In most instances the changes in the skeletal system are the principal features, but in some cases the renal symptoms predominate and failure to recognize this fact may lead to error. In such cases renal symptoms are present for many years, and although intermittent in character, nevertheless are definite. They consist of dysuria, nycturia, and even renal colic with or without gravel. Renal calculi, pyelitis, or pyelonephritis may frequently be the first and only symptoms. In such instances the true symptoms may be vague or entirely absent. Albright, Baird, Cope, and Blomberg³ report a case with renal complications and emphasize that with all the symptoms and signs of nephritis we may mistake the disease for chronic glomerulonephritis were it not for the accompanying changes in the bones. They point out that with profound kidney damage and renal insufficiency there is interference with calcium and phosphorus excretion in the urine. In such instances calcium deposition may occur in the tissues. It is, of course, important to know which is the primary disease process, when renal disease and calculi are associated. Albright, Aub, and Bauer² report eight cases of hyperparathyroidism where the diagnosis was made as a result of doing routine calcium and phosphorus determinations in all patients with urinary calculi. It therefore becomes obvious that hyperparathyroidism may not infrequently be a cause of renal calculus.

The biochemical disturbances that occur as a result of the oversecretion of the hormone must be definitely established to make the diagnosis of clinical hyperparathyroidism. Of significance is the presence of a high serum calcium and a low serum phosphorus. These values, however, may vary within a wide range from 12.5 milligrams to over twenty milligrams of calcium per 100 cubic centimeters of serum and from 1.0 to 3.0 milligrams per 100 cubic centimeters of inorganic phosphorus. In not a few instances the inorganic phosphorus may be normal. But these metabolic

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changes are not the only requisites in the diagnosis, for high calcium values may occasionally be observed in multiple myeloma, a metastatic carcinoma of bone, and in certain other diseases accompanied by hyperproteinemia. Therefore the most important chemical evidence is the study of the calcium and phosphorus balance or level of calcium and phosphorus excretion on a known low calcium diet. A negative balance strongly supports the diagnosis, and of the two measurements, the calcium excretion is by far the most important since an excessive excretion of calcium in the urine is found in almost all instances. Furthermore, although calcium excretion in the feces varies with the intake, the urinary calcium nearly always maintains an abnormally high level in hyperparathyroidism. In certain instances, however, with severe nephritis associated with renal insufficiency, the urinary excretion of calcium may be diminished and confuse the picture. In these cases the roentgen ray evidence of generalized osteoporotic changes usually will support the diagnosis.

Roentgen ray findings consist chiefly of cysts, tumors, fractures, and evidence of generalized thinning of bone. This is best seen in the flat bones and in the skull. In instances of renal involvement without changes in the bones, metastatic calcified areas in the kidneys may be present. The most important roentgen ray finding, however, is a progressive thinning of all bones. Such a finding associated with renal calculi warrants metabolic studies.

Case Report.—Mrs. E. R., a fifty-one-year-old white female, was admitted to Vanderbilt University Hospital on April 29, 1935, complaining of pain in the left flank. The pain radiated around the abdomen, down to the genitalia, and was associated with burning on urination. Seventeen years ago she had intermittent attacks of renal colic on both sides, which lasted for nine months, associated with the passage of several small dark brown stones. There were no more attacks until January, 1935. During the first illness she was advised to discontinue eating meat, and while on a low protein diet, developed sore tongue, roughness of the skin, and swelling of the ankles.

Because of these symptoms and pain in the back and lower extremities, she came to one of us on May 3, 1933. Roentgenograms of the kidneys, left knee joint, and left femur showed only thinning of the bones. The diagnoses of Paget's disease and nutritional edema were made, and she was placed on a diet high in protein. On October 6, 1934, she returned because of swelling of the ankles, fatigue, nausea, vomiting, nycturia, and frequency. The urine showed some albumin and many pus cells. A serum calcium determination at this time showed thirteen milligrams per 100 cubic centimeters (normal serum calcium, nine to eleven milligrams per 100 cubic centimeters.) Because of the hypercalcemia and the roentgen ray findings of decalcification of the long bones, the patient was placed on a high calcium, high vitamin, high protein diet. Three months later she developed an attack of renal colic, and from January to April, 1935, had three such attacks. The patient grew progressively weaker, her appetite was poor, and she lost fifteen pounds in weight. In addition, she had cardiac palpitation brought on by nervousness and exertion.

Past History.—She had had scarlet fever at age five, influenza in 1918, and two or three attacks of sore throat. Her tonsils and appendix were removed seventeen years ago. Her husband, one brother, and one sister all have tuberculosis. She has had no symptoms of tuberculosis, and repeated roentgenograms of the chest have been negative.

Physical Examination.—This revealed a malnourished apathetic individual, normally developed, and very intelligent. The head was peculiarly pointed in shape, the cheeks had a hollow, sunken appearance, and the chin protruded forward. The pupils reacted normally to light and accommodation; the fundus examination showed some variation in the retinal arteries, but there were no hemorrhages or exudate. There was a fullness over the thyroid gland, but no masses were palpable. The heart and lungs were normal. The blood pressure was 120/74. Examination of the abdomen revealed definite tenderness in the left flank. There was a definite dorsal

kyphosis of the spine and tenderness over the bones of both lower extremities. There was a pitting edema of the feet and ankles, extending halfway up the legs.

Laboratory Data.—Urinalysis: specific gravity varied from 1.005 to 1.012; no albumin; sediment contained five to six red blood cells and an occasional white blood cell; the benzidine test was positive. Blood: the red blood cell count was 3,760,000; hemoglobin, thirteen grams; white blood cell count, 13,000. Blood smear was normal. Wassermann and Kahn tests were negative. Basal metabolic rate was minus nine per cent. The phenosulphophthalein intravenous renal function test was fifty-five per cent. Blood nonprotein nitrogen varied between twenty-five and forty-one milligrams per 100 cubic centimeters. The serum phosphatase was seven units per 100 cubic centimeters (normal, six to twelve units per 100 cubic centimeters). The serum protein was 6.8 per cent, with 4.3 per cent albumin and 2.5 per cent globulin. The serum calcium was 12.9 to 13.5 milligrams per 100 cubic centimeters. The serum inorganic phosphorus was 2.1 to three milligrams per 100 cubic centimeters. Roentgen rays revealed a large ureteral calculus in the upper segment of the left ureter. "The wing of the left ilium showed marked thickening with striations and also a large area of osteitis along the left sacroiliac region. There was considerable hypertrophic arthritis of the lumbar spine. There was a marked thickening of the bones of the skull. The bones of the hand showed marked thinning of the cortex. The bones of the thighs and legs showed peculiar striations and thinning of the cortex." (Dr. C. C. McClure.)

Because of the apparent disturbance in calcium metabolism, it was decided to investigate this more fully. The patient was put on a low calcium diet containing 0.3 grams of calcium per day. After five days on this diet the whole of the urine and feces were collected for a three-day period, the former as separate twenty-four-hour specimens, and the calcium content of these was determined. The patient received cachets of carmine, the appearance of the dye in the feces serving as an indicator for the de-

marcation of the period of observation. The total output of calcium for the three-day period was 1,335 milligrams, of which 931 milligrams appeared in the urine and 424 appeared in the feces. In other words, sixty-six per cent of the total amount of calcium excreted appeared in the urine. In a normal individual on a similar diet, only ten to thirty per cent of the total calcium excreted appears in the urine, the remaining seventy to ninety per cent being present in the feces. This test was repeated with similar results.

Diagnosis.—Because the polyuria, nycturia, hypercalcemia, hypophosphotemia, and calcium metabolism studies seemed consistent with hyperparathyroidism, an exploratory operation was done on May 29, 1935, for either an adenoma of the parathyroid gland or the removal of one parathyroid in order to ascertain whether or not there was hyperplasia of the gland. A parathyroid tumor 2.5 centimeters in length and one centimeter in diameter in the region of the left lower lobe of the thyroid was



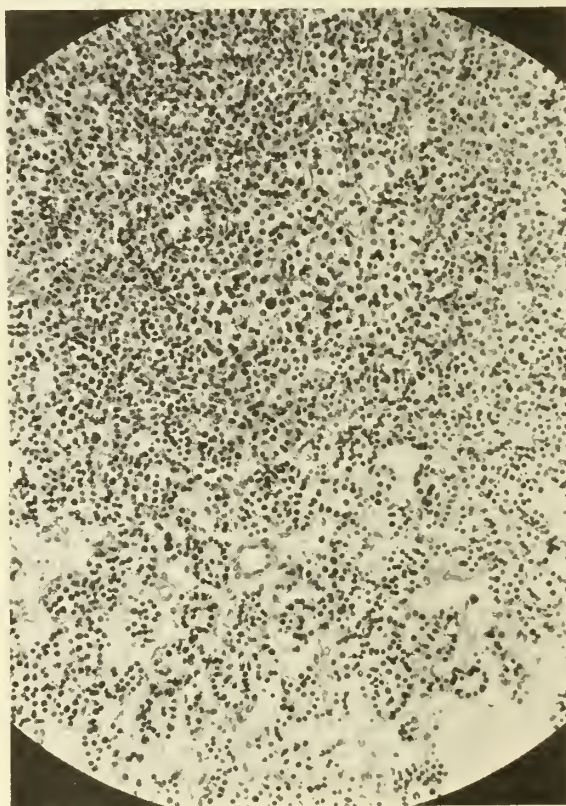
ADENOMA OF THE PARATHYROID

Colored drawing showing tumor exposed by a splitting of the capsule.

found and removed by Dr. Barney Brooks. (Fig. 1.)

Pathological Report.—The specimen was a very soft, dark purple, club-shaped, smooth, encapsulated tumor. A thin capsule was opened and a layer of blood was released. This revealed a brownish-yellow, dull, smooth tumor mass about one-half the size of the specimen. On cut section it had a smooth, homogeneous appearance and was light caramel in color. Dr. Ernest Goodpasture's report on the section was as follows: "The microscopic section consists of a very cellular, irregularly elliptical, piece of tissue measuring twelve by five millimeters. Nuclear material as compared with cytoplasm is very abundant so that the tissue stains deeply blue with hematoxylin-eosin. Under low power the tissue seems to be quite uniform in appearance, consisting of epithelial cells arranged in small acini and alveoli compactly situated with very little stroma separating them with a rich collapsed capillary bed. There are several medium-sized arteries and veins tracing through the substance of the tissue. The composition of the tissue is not entirely uniform because there are several areas situated toward the center of the mass which are less cellular than the surrounding tissue and in which the alveoli are thinned out and often arranged in strands. Here the nests of epithelial cells are widely separated by spaces containing a pink granular precipitate. These spaces appear to be greatly distended lymphatics. In other foci the epithelial cells are compact, but contain a relatively abundant pink-staining granular cytoplasm, so that these areas have a paler pinkish appearance in contrast to the denser surrounding areas. Where the alveoli have an acinar arrangement, the epithelial cells are low, cuboidal in shape, and their nuclei are situated toward the basement membrane. Throughout the section the cytoplasm of the cells are faintly pink, containing amorphous granular material and sometimes the cytoplasm appears to be washed out, but in general the epithelial cells throughout the section have irregular basophilic condensations within the cytoplasm. There are a few areas of adipose tissue infiltration within the glandular substance.

While, for the most part, the cells are fairly uniform in size and have regular oval nuclei, there are a great many hypertrophic nuclei scattered irregularly throughout, and there are small foci in which the cytoplasm is greatly increased in amount without change in size of the nuclei. In such cells the cytoplasm has a uniform, fine pink granulation, and no mitotic figures were seen. There is a distinct but thin capsule surrounding about half of the section, and into this there is an irregular growth of glandular acini. There is, however, no evidence of malignancy. The tissue is typically that of the parathyroid gland, and the condition is one of hyperplasia of the glandular cells." (See Fig. 2.)



The tissue is that of hyperplasia of the glandular cells of the parathyroid gland.

Subsequent Course.—The patient stood the operation well, and the first post-operative day was uneventful (May 30, 1935). On the morning of May 31, on the second day, she developed a sensation of oppression in the chest, increased irritability, tingling in the fingers, and a positive

Chvostek sign and Trousseau sign (the serum calcium was 9.1 and phosphorus 2.2 milligrams per 100 cubic centimeters). For ten days she had symptoms of tetany, which were easily controlled by the administration of eight cubic centimeters of forty per cent calcium chloride four times a day and two doses of calcium gluconate intravenously on the third and fourth post-operative days. At no time was it found necessary to give Collip's parathyroid extract. By June 28, 1935, it became obvious that she could not pass the stone in the left ureter, and on that day it was removed by Dr. E. H. Barksdale.

The partial analysis of the stone was as follows: Weight of stone (oven-dry): 155.6 milligrams; $\text{Ca}_3(\text{PO}_4)_2$ 38.1 per cent; CaC_2O_4 (oxalate), 43.4 per cent; urates, trace; carbonate, trace; cystine, trace; percentage of stone as calcium, 28.3 per cent.

The patient's recovery was uneventful, and she was able to leave the hospital on July 13, 1935; her only symptom was an occasional mild tingling in the arms.

Readmission.—The patient was readmitted to the hospital on September 9, 1935, for calcium metabolism studies. Her only symptoms were occasional edema of the ankles and mild symptoms of tetany. She had gained twenty-three pounds in weight and felt better than ever before. The physical examination revealed a cheerful, adult female. The skin was warm, dry, and there was a papular pruritic rash with an erythematous base over the ankles and the lower part of each leg. The spine and extremities were not tender. The neurological examination was negative.

At this time the laboratory data were as follows—Urine: specific gravity, 1.007; no albumin; no sediment; three to five white blood cells; no red blood cells. Blood: red blood cell count, 4,000,000; white blood cell count, 8,000; hemoglobin, 12.2 grams. Venous pressure in the arms was eighty-five millimeters of saline. Blood nonprotein nitrogen thirty-eight milligrams per 100 cubic centimeters. Serum protein, 6.4 per cent; albumin, 4.4 per cent; and globulin, 2.0 per cent. Serum calcium, 9.8 milligrams per 100 cubic centimeter. Inorganic phosphorus was 3.1 milligrams per 100 cubic centi-

eters. Roentgen rays showed little change in the cranial bones, but the wing of the left ilium showed a bone structure much nearer normal bone than on any previous occasion.

The metabolic studies were repeated and are shown together with the preoperative studies in Table 1. Compared with the preoperative period when the total calcium excretion for three days was 1,335 milligrams, of which 931 milligrams appeared in the urine and 424 milligrams in the feces, the total excretion now for three days was only 168 milligrams in the urine and 388.8 milligrams in the feces.

TABLE 1

CALCIUM EXCRETION ON LOW CALCIUM DIET BEFORE AND AFTER REMOVAL OF PARATHYROID ADENOMA

(Three-day metabolism period; diet containing approximately 0.3 grams calcium per day)

Mrs. E. R.—No. 70887

5, 15/35-5/17/35 (Before)		9/15/35-9/17/35 (After)	
Grams Calcium		Grams Calcium	
URINE	FECES	URINE	FECES
0.931	0.425	0.169	0.389
Per cent excreted in urine, 69.		Per cent excreted in urine, 30.	

Before operation the serum calcium was high, ranging from 12.5 to 13.5 milligrams per 100 cubic centimeters, and the serum inorganic phosphorus 1.7 to three milligrams. After recovery from the operation the serum calcium varied from 9.8 to 10.1 and the serum inorganic phosphorus from 3.0 milligrams to 4.7 milligrams. These findings showed clearly that the hormone from the adenoma was directly concerned in the hypercalcemia which was present before the operation.

COMMENT

The treatment, in a given case of marked hyperparathyroidism, is surgical, and the surgeon can expect a good-sized tumor. But he must be a good surgeon and a courageous one, for one does not always find the tumor at the common site for the parathyroid glands. A search for the tumor may lead him into the anterior mediastinum. It must be borne in mind that removal of a normal parathyroid gland is dangerous and may lead to marked post-operative

tetany which may be fatal. The surgeon must also exercise careful judgment in deciding how much to remove. For here, as in the thyroid, the decision between a subtotal removal and complete extirpation may affect the future of the patient's life. One must also bear in mind that these tumors may be multiple, and if removing one does not cure the patient, a second operation may have to be performed at a later date. Medical treatment is of no value. Diets high in calcium and phosphorus may prevent the decalcification of bone, but increase the incidence of renal calculi. As for the administration of vitamin D, in instances of osteoporotic changes, it is generally agreed that it is of little value. One must avoid seeing hyperparathyroidism where it does not exist and be sparing of surgery in cases that are not clearly instances of the disease.

The complication that arises after operation is post-operative tetany. Increased irritability of the muscle, carpopedal spasm, positive Chvostek and Trousseau signs may appear within the first twenty-four hours after the operation. They are accompanied by a marked diminution of calcium in the urine, and return of the serum calcium to normal or subnormal values. The low values may persist for weeks and even months after the operation. The control of these symptoms is obtained by the administration of calcium salts by mouth, calcium gluconate intravenously, and Collip's parathyroid extract. Calcium in some form must be administered frequently, as it is very rapidly excreted or stored. Eventually a readjustment of the activity of the remaining parathyroid tissue occurs and these symptoms disappear. The improvement following operation is dramatic. The patient's general appearance changes; lassitude is replaced by a feeling of energy and the bone pains immediately disappear. Changes in bone may be followed with repeated roentgenograms and, although they do not parallel the marked symptomatic improvement, eventually present a normal appearance.

SUMMARY

A case of adenoma of the parathyroid gland, with hyperparathyroidism and renal

calculus, has been presented with a discussion of the laboratory and clinical features of the disease. The diagnosis was based on a history of renal colic for many years, the roentgenographic evidence of decalcification of bone, the chemical evidence of hypercalcemia, and hypercalcinuria. An adenoma of the parathyroid gland was removed at operation 2.5 centimeters in length and one centimeter in diameter. The renal calculus on analysis was found to be a calcium stone. Improvement in the condition of the bones, as well as the general condition of the patient, followed the operation.

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DISCUSSION

DR. THOMAS D. MOORE (Memphis): Dr. Riven's excellent presentation of this subject is very timely. Hyperparathyroidism is of particular interest to urologists because of the tendency to lithiasis secondary to the hypercalcemia. Calcium deposits, essentially casts in the tubules of the kidney, areas of calcification in the renal parenchyma, as well as stone formation in the pelvis and calices, have been described as features of this disease. In a recent report by Chute, of seventeen cases treated at the Massachusetts General Hospital, there were renal complications in fifty per cent.

The recognition of hyperparathyroidism as a factor in the formation of stones in the urinary tract marks a distinct advance in our knowledge of lithiasis, as it constitutes one more addition to the growing list of known causes of calculus disease. It is probable, however, that it is the etiologic factor in a very limited number of cases.

In the practice of urology I do not know of anything more satisfying than to be able to uncover this particular cause of renal stones, employing the scientific methods Dr. Riven has so clearly set forth. To be able to assure a patient who has suffered the agony of repeated attacks of renal colic, or possibly the surgical removal of stones on several occasions, that the cause of his trouble has been eradicated and that he will be free of the formation of stones in the future, having had a parathyroid adenoma removed, is gratifying to the urologist, to say the least. Recently I have had

this experience. An abstract of the case will be presented.

This slide is taken from Dr. Wilder's article, to which Dr. Riven referred, about the geographic distribution. Although in many sections of the world they have been on the alert, looking for this trouble, it seems to be concentrated in certain areas geographically, possibly for the same reasons that goiters are much more prevalent in some sections.

Per 100,000,000 of population more have been found in the North Atlantic States than anywhere else; only 9.5 in Italy, compared with 113 in the New England States.

In this case I am presenting, this man of thirty-four years had been a stone former for four years, with the passage of stones at three to six-month intervals. His last previous attack began one week before, with persistent, dull pain in the left loin. There was a small amount of blood and pus in the urine, a pH of 6.7, otherwise negative.

In the general physical examination practically the only thing noted was the tenderness in the left loin, slight fullness in the left supraclavicular fossa, moderate benign hypertension, and a tendency to obesity.

The plain film showed shadows suspicious of stones in both renal areas. These were identified with an excretory urogram as two stones in the lower calix on the right, a large stone approximately two centimeters in diameter blocking the outlet of the left kidney, and another stone in the lower calix on this side.

The blood calcium was studied during an uneventful convalescence from the renal operation, and a value of 17.1 milligrams was found, and the serum inorganic phosphorus was 2.5 milligrams for each 100 cubic centimeters of blood. These were checked and an elevated value of the calcium again found, and a low phosphorus, whereupon the roentgen studies of the skeleton were made with negative findings, which would classify this patient in Group 3 according to the classification Dr. Riven presented.

Under a diagnosis of parathyroid adenoma, with hyperparathyroidism, exploration was advised. This operation was done February 28 by Dr. R. L. Sanders, who found and removed a tumor 2.5 by 1.75 by 1 centimeter which was posterior to the left lobe of the thyroid and adjacent to the trachea.

A high power shows the granulocytoplasm, the prominent nuclei, and the loose stroma, and a typical acinus.

This is the curve of the calcium and phosphorus metabolism in this case. Notice the precipitant drop following the removal of the adenoma down to within the normal range of nine to eleven. This was checked daily for four days, and three days later was still in normal limits and the phosphorus was returning to normal.

In another case of a chronic stone former, during four years of observation, I removed these

two stones in 1930 from both kidneys, a stone from the ureter cystoscopically in 1932, two years later these huge stones from both kidneys again, and in 1934 again a stone in the right kidney.

This patient had a high calcium and a low phosphorus, a man of fifty-four. Exploration of the region of the normal parathyroids revealed a small olive body which was thought to be a parathyroid adenoma. Unfortunately, a frozen section was not made, and the report some days later showed an aberrant thyroid. This did not mean, however, that this patient did not have a parathyroid adenoma, as it may have been present in an aberrant location, such as the mediastinum, for instance.

It behooves every urologist to be on the alert, or hyperparathyroid-minded, in detecting these cases. Few, if any, will be overlooked if the following precautions are taken with every patient suffering from nephrolithiasis:

1. Always suspect hyperparathyroidism in the chronic stone former.

2. In the presence of renal lithiasis a sterile culture of the urine should arouse suspicion of a metabolic cause of stone formation.

3. Estimation of the blood serum calcium and inorganic phosphorus and a quantitative estimation of the urine calcium should be made routinely in cases of recurring stones.

4. The finding of osseous changes characteristic of the disease, such as osteitis fibrosa cystica, is evidence of great value.

5. Chemical analysis of a stone which proves to be composed wholly or in part of calcium phosphate should lead to a careful review of the calcium metabolism of the patient.

6. Exploration of the parathyroid glands should be requested unhesitatingly when the clinical and laboratory data point to a state of hypercalcemia and hypophosphotemia.

It might be stated, in conclusion, that both of the patients mentioned in this discussion voluntarily related a possible symptom which I have not found listed in the literature. I refer to a marked increase in the deposit of tartar on the teeth. One of these patients routinely removed the accumulation each morning with a penknife. In the case in which the parathyroid adenoma was removed this symptom promptly disappeared after the operation. This observation will be followed up by an estimation of the salivary calcium in any cases which may be observed in the future.

DR. S. S. MARCHBANKS (Chattanooga): Dr. Riven has presented an excellent paper, and it should be very interesting since only about 115 such cases have been reported up to 1934. I wish to report a case and perhaps, if I have time, to show a few slides.

This patient, white female, was first seen in 1925 by Dr. C. R. Thomas and me. Age now forty-

four, married, husband died October, 1935, of heart disease. The high points in the history are that the paternal grandmother had cancer of the uterus, many of the family have headaches. The patient had some hemoptysis a year ago; no cough of importance; always had profuse menstruation; first child blue baby and died; second child living and healthy; no miscarriages.

Since 1925 she has had more or less of purpura hemorrhagica, which apparently accounts for the hemoptysis referred to, since physical and X-ray examinations of the chest were negative. The tonsils had been removed, though a throat culture showed some staphylococci and streptococci. Routine laboratory check on urine and blood 1925 essentially negative, Wassermann negative, coagulation time three minutes and thirty seconds, capillary method. This varied from four minutes to normal during the course of the treatment. X-ray of the genitourinary tract showed considerable colonic spasticity. Feces negative except for some blood. X-ray of sinuses showed some cloudiness of the right antrum, which was thought to be old and symptomless. Teeth negative.

In 1927 there was some complaint of tenderness in the left breast, but a check on this showed no evidence of cancer, though a few small nodes were palpable in the axillary region. In 1932 there were some palpable changes in the left breast in the upper outer quadrant, more suggestive of chronic mastitis (possibly early cystic), but to be safe we gave her X-ray therapy. Then a radical resection of the breast was done by Dr. H. H. Hampton after checking the macroscopical and frozen section. This was followed by further radiation, and now, three and a half years later, there is no evidence of recurrence in this breast.

During all this time, however, this patient had recurrences of the purpura, and much calcium medication, with and without parathyroid, has been given, as well as vitamins, also X-ray to the spleen, so that this condition was more or less kept under control.

In March, 1935, three and a half years after the breast operation, she came in complaining of soreness and stiffness of the muscles, mostly of the upper thighs, and difficulty in walking, especially going up and down stairs, walks with a limp, complains of nervousness and sleeplessness, appetite fair and digestion good, but has waves of nausea, dizziness, and morning headache.

X-ray films in March of the pelvis, femora, and other bones showed a large area of bone porosity and erosion-like absorption over the right acetabulum, which strongly suggested metastatic cancer, especially since cancer had been present, but there were noted cystic bone changes in the upper ends of the femora and porosity of some of the ribs, though just the opposite condition in the skull where there was a definite increased density and thickening of these bones from calcium retention and deposit—a paradox. The blood calcium at this

time was thirteen milligrams per 100 cubic centimeters, the phosphorus 3.5.

These changes in the skull and cystic change in the femora largely cleared up the fear of possible metastatic bone carcinoma, which naturally was the first thing thought of. On account of the breast cancer history, a needle biopsy was done by Dr. R. P. Ball and found negative to malignancy. The specimen was taken from the lesion in the right ilium.

In May radium was given for continued uterine bleeding (functional, age forty-four). Cessation of menses resulted.

We have given this patient routine radiation to the parathyroid region according to Merritt's technic (240 r at 140 k. v. through $\frac{1}{4}$ cu. plus 1 Al. at intervals of three weeks) and some 200 k. v. to the involved supra-acetabular and femoral areas with considerable filling in of bone and relief of symptoms. In September, 1935, blood calcium still was high — fifteen milligrams — and phosphorus three milligrams.

Calcium and vitamins have been continued to some extent for the purpura and to try to prevent further decalcification of the bones. No parathyroid extract has been given for some years.

On September 30, the patient sustained a subtrochanteric fracture of the left femur as she turned to post a letter on a perfectly level floor. She was put in a cast from chest to feet and the fracture seemed to be healing normally for a time, but on checkup examination January 2, 1936, there was a great change which had taken place in about three weeks' time. Now there was greater absorption and porosity or osteolytic change of malignancy. Following this a needle biopsy was reported metastatic carcinoma.

Film of January 8, 1936, shows a little improvement as compared with the film of January 2, 1936. Film February 12, 1936, by Dr. J. N. Moore, of Ocala, Florida, where she went to be with her family, shows pretty much the same status. The last film of a few days ago shows possibly a little improvement.

Dr. Moore has carried on with deep X-ray over the femora and ilia which we had begun again here.

On the whole, this case appears to have purpura, malignancy (carcinoma), and hyperparathyroidism. What is the relationship of this triad?

(Slide.) This film was made in the beginning. On the patient's right above the hip joint you will notice absorption of bone. At that time changes in the upper end of the femora were noted. You can see a little edge of it there, but I did not realize it at that time.

Now you can see the porosity in the upper end of the femur, and also on the opposite side in the opposite ilium you will note some absorption of bone corresponding to the other side, except to a lesser degree.

(Slide.) This is made to check up on the condition of the lumbar spine, which I considered negative.

(Slide.) This is a film made a month or so after the beginning of treatment, and you will note there some filling in of bone in the ilium. I think that the cystic area in the femur too is less noticeable.

(Slide.) This was made possible four months after the beginning of treatment, and I think you will notice still further filling in of the bone of the ilium. Also I think there is further filling in in the cystic areas in the upper ends of the femora. One thing should be noticed here — left lesser trochanter porosity there that I had not noticed before.

(Slide.) These films of knee regions were made simply to check up at the beginning of the examination. On the original films you can see peculiar striations that are not quite normal.

(Slide.) A film of the skull made at the beginning, in which you will note the increased density of all bones, cloudiness, but an even cloudiness, not the "nigger-wool" type that you see in Paget's disease.

(Slide.) That was made as a checkup on the ribs and dorsal spine. It is a little light for a dorsal spine, but you see the bodies all stand up normally, and there is no softening or giving down which would result in shortening of stature.

(Slide.) That is made to show the absence of one breast.

(Slide.) In this slide I thought I could make out an area of absorption in the rib. On the original films you can see considerable absorption scattered through all the ribs.

The patient complained of pain in the jaw, and because of the possibility of cyst formation there we made that examination.

This is the first film made after the fall on the floor, showing fracture of the left femur through the cystic area.

(Slide.) That is the appearance somewhere between three and four weeks after the patient was put up in a cast.

DR. R. L. SANDERS (Memphis): This paper by Drs. Riven and Mason and its discussions have been especially illuminating. Surgeons owe a debt of gratitude to the urologist, the roentgenologist, and the orthopedist for accounts of their experiences with these cases of stone formation in the kidney as a result of hyperparathyroidism. The subject is an interesting one, particularly to the surgeon whose practice embraces a considerable number of operations upon the thyroid gland.

I should like to speak briefly of the surgical aspect of parathyroid tumors. As a rule, operation for removal of these growths is a simple procedure, and, as it entails practically no risk to the patient, should be carried out in any suspicious case.

In the presence of a parathyroid tumor, the thyroid gland is seldom abnormal, so that no difficulty is encountered in exploring the posterior surface, where the tumors are commonly found. A pathologic condition of the thyroid and parathyroid glands rarely coexists. If the thyroid gland is diseased, however, exposure of the posterior surface and identification of the parathyroids is more difficult because of hemorrhage, especially when the diseased thyroid gland is large. In this event, precautions should be taken to avoid the spilling of blood into the wound.

In removing parathyroid tumors, it has been my custom to divide the muscles on both sides and draw them back with retractors to permit turning of the thyroid gland mesially for a view of the posterior surface. In the majority of cases, parathyroid tumors are situated on the left toward the lower pole, where they may readily be found by proper rotation of the thyroid gland. An artery usually is attached to the tumor, thus permitting its differentiation from an aberrant thyroid gland.

Through the courtesy of Dr. Moore, I had the privilege of doing an exploration for parathyroid tumor in the two cases which he has just presented. In one a tumor was removed, but in the other none could be found. In the first case, the tumor was located behind the lower pole on the left, just beneath the inferior artery. Incidentally, on the opposite side was an aberrant thyroid gland almost as large as the parathyroid tumor. The aberrant gland was easily removed by the same technic as was employed for the growth. In the second case, an aberrant thyroid gland resembling a parathyroid tumor was observed; however, no artery was attached and it did not appear quite typical. As Dr. Moore stated, the diagnosis was made by the pathologist. This experience illustrates the necessity for an immediate and careful pathologic study of the tissue excised in order that there may be no question as to whether it is that of an aberrant thyroid gland or a parathyroid tumor.

I agree with Dr. Riven that one must be courageous and ready to meet and accept defeat in these operations. Not always will a tumor be discovered. Or, perhaps, as Dr. Moore mentioned, a parathyroid adenoma may be found in the mediastinum or elsewhere. But a search is well worth while. When a parathyroid tumor is located and removed, the resulting relief afforded the patient suffering from renal colic is a fine reward for our efforts.

DR. SAMUEL S. RIVEN (closing): I wish to thank Dr. Moore and Dr. Marchbanks for lending their presence to this meeting and discussing my paper. I also want to congratulate Dr. Sanders for having removed just the exact, right amount of adenoma in the case of Dr. Moore.

You will note that in our instance we reported the symptoms of post-operative tetany. In most instances reported in the literature this is a common occurrence. It is very interesting and very

gratifying to me to hear Dr. Moore's report about the absence of tetany post operatively.

In the case reported by Dr. Marchbanks, one very important thing I think should be emphasized. On the surface it certainly appears likely that the diagnosis of adenomatous parathyroid is reasonable, but there is one important thing: in differential diagnosis there are innumerable other conditions, particularly carcinoma and multiple myeloma,

and other conditions which are associated with excessive hypercalcemia. For this reason calcium balance studies are important, and it is an important thing to place the patient on a diet low in calcium and to follow the excretion of calcium in the urine and the feces. If this is present and associated with blood calcium of 12.5 or thirteen up to a level of twenty, the surgeon can expect to find an adenoma of the parathyroid gland.

IMPACTED DENTAL PLATE IN LARYNX; REMOVAL BY SUSPENSION

E. LEE MYERS, M.D., St. Louis, Missouri

IN A SOMEWHAT desultory perusal of the literature one is struck by the frequency with which dental plates become lodged in the esophagus; however, there is a paucity of cases where a plate of the size herein to be described has entered the larynx. The following case report has proved very interesting to me because of its rareness.

Case Report.—E. C., male, age forty-two years. While on a fishing trip June 3 he had an attack of grand mal, and upon recovering consciousness, the group with whom he was fishing noticed that he was hoarse; however, five days later when he presented himself to his local physician, Dr. R. Graham Fish, of Paris, Tennessee, he was slightly dyspneic with his hoarseness. The patient volunteered the information that he was missing his partial upper plate, which was originally a two-tooth vulcanite denture which extended from the upper right side of his mouth to the left. The tooth which was on the left had broken off, but the patient had worn the bridge for considerable time without difficulty as it held itself in place very well by suction. A fluoroscopic examination showed the plate to be in a sagittal position in the larynx, but by indirect examination by Dr. Fish no evidence could be seen. I confirmed this examination late that evening by direct inspection. X-rays were made which proved the presence of the foreign body in the larynx.

Operation. — June 8, 1936, McSwain Clinic, Paris, Tennessee. The larynx was exposed by Jackson's laryngeal speculum; the foreign body was seen as a reddish mass in the anterior commissure, but it was difficult to release same because the patient was struggling and considerably dyspneic; a second trial proved also to be a failure. At this time the patient was cyanotic; he was given oxygen and after a few minutes' delay a local tracheotomy was done and an attempt made to remove the intruder

through the tracheotomy wound. The object was grasped, but could not be delivered, possibly due to the width of the base of the dental plate which had toggled. Conse-



Fig. 1. Anterior-posterior view. Tracheotomy tube in position. Dental plate in subglottic larynx and trachea.



Fig. 2. Lateral view. Dental plate base up, tooth anterior acting as hook in anterior commissure, sharp end of base also holding posteriorly because of wedge-like shape.

quently, inasmuch as the disturbance of breathing had been satisfactorily handled, the patient was returned to his bed for a subsequent trial when able to visit St. Louis.

Second Operative Procedure. — Jewish Hospital, June 26. Avertin anesthesia enhanced with ether through the tracheotomy opening. The patient was suspended

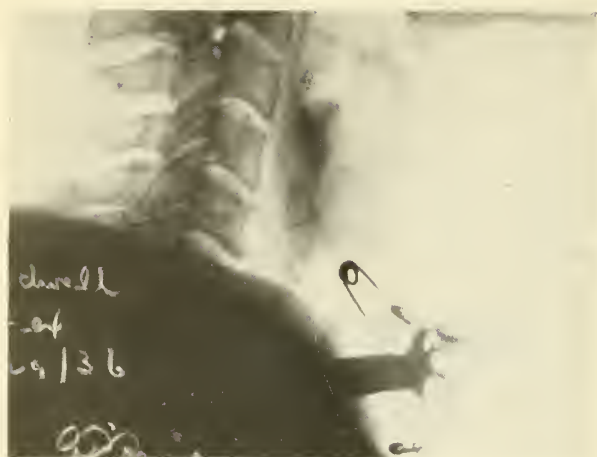


Fig. 3. Dental plate removed; tracheotomy tube in place.

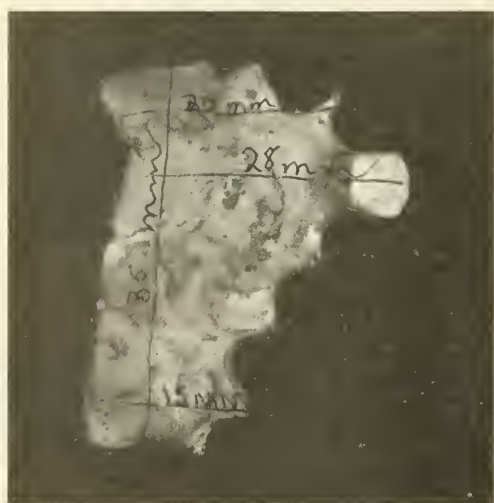


Fig. 4. Dental plate enlarged one-quarter.

with the Killian suspension apparatus (Lynch modification). Here one found considerable edema of the left false cord, which, after being pressed towards the left, showed a reddish mass having a convexity which practically occluded the larynx. Grasping the convex portion with the Irwin Moore alligator rat-tooth forceps, it was

with difficulty that the plate could be dislodged. By using a suction tube which could be insinuated between the dental plate and left lateral wall simultaneously, with traction of the plate to the right and movements backwards and forwards, I was able to dislodge the tooth which was lying anteriorly and was acting as a hook. The plate came out after some few moments of jig-sawing. The larynx was further exposed with the Lynch bivalve speculum; the interior of the larynx was then well painted with tincture of benzoin compound because of its antiseptic properties. Time consumed, twelve minutes.

The patient was dismissed from the hospital in three days and is to remain under the care of his local physician with instructions to decannulate the tracheotomy tube after the method first described by Chevalier Jackson.

As you will notice from the X-ray showing removal, there is some evidence of a disturbance of the laryngeal box which may have been caused by the presence of the foreign body in the larynx, but there is also the possibility that a constitutional condition may be the responsible factor.

In my opinion, it appears that in similar cases of foreign bodies in the larynx the suspension apparatus gives considerable advantage in the removal of intruders of large proportion, as it permits one to have the assistance of two free hands and the wide exposure of the throat; it also permits assistance, which can be given by either one or two other physicians as the occasion demands.

I am certain that the suspension method in this particular case obviated the necessity of removing this foreign body by laryngofissure.

POLIOMYELITIS*

JOE B. WRIGHT, M.D., Lynnville

I. *History*. — There is little accord among investigators concerning its recognition or even its existence before the end of the eighteenth century. At least we find no reference in the literature which we can definitely relate to the disease as we know it today until about this time. In 1784 and again in 1799 Michael Underwood, of London, in his work, entitled "Treatise on the Diseases of Children," presented the first discussion of the condition as a clinical entity. From this time until 1840 with the publication of Jacob Heines' Monograph, some half a dozen or more papers appeared of a confirmatory nature, stimulated by these various reports and the occurrence of twenty-seven cases in his own practice. Heime, an orthopedic surgeon of Cannstatt, published the first systematic study of the disease in a seventy-eight-page monograph. He discusses the symptomatology, etiology, pathological anatomy, diagnosis, prognosis, and therapy in some detail, and it may be said fairly that his description for the most part scarcely can be improved today.

Colmer in 1843 described the first cases in the United States. In 1887 Medin studied an outbreak in Sweden and his observations were of such significance that in Europe today the disease is known more generally as Heine-Medin disease than poliomyelitis. In 1888 Rissler reported three autopsies and was the first to note the systemic nature of the infection with the involvement of the reticulo-endothelial system. From the epidemiologic aspect, poliomyelitis has changed from a sporadic to an epidemic disease in scarcely more than fifty years. No satisfactory explanation for this phenomenon has been advanced. In 1908 definite proof was brought

out that the disease was infectious and could be transmitted from animal to animal experimentally.

II. *Etiology*.—At present authorities do not entirely agree as to the causative agent. On one hand, we have those believing it due entirely to a filtrable virus. On the other, we have those believing it due to a streptococcus. Until the cause is definitely established, until a susceptibility test similar to the Schick test, and until a specific immunization agent such as that used at present for diphtheria is perfected, our efforts toward the control of this disease will be unsatisfactory.

III. *Pathology*.—Pathologically the definition of poliomyelitis is as follows: "A generalized systemic infection of a specific but as yet undetermined (beyond its virus and filtrable nature) etiology, with a predilection in its localization, in its initial phase for the reticulo-endothelial system and its second phase for the central nervous system, especially the ganglion cells of the lower motor neuron of the spinal cord.

It is ordinarily associated clinically with upper respiratory and gastrointestinal symptoms in its preliminary stage and may fail to manifest its secondary central nervous involvement, in which instance it often escapes recognition even during epidemics of the disease.

In discussing the pathology of the disease it will be divided into the two before-mentioned phases.

First, Reticulo-endothelial System. — Roughly, this may be defined as that part of the body which has to do with formation of blood cells not only for normal purposes, but those cells which are called out to combat inflammatory conditions throughout the system. It is composed of various glands in the body of a lymphoid nature as well as the lining of blood vessels. In the acute stage of poliomyelitis there is always a regular involvement of this system of a higher plastic nature.

*Presidential address before the Middle Tennessee Medical Association, Shelbyville, May 15, 1936. The author wishes to acknowledge his indebtedness to Dr. J. U. Speer, director of the Giles County Health Unit, for his collaboration in the preparation of this paper.

Thymus and spleen show hyperplasia.

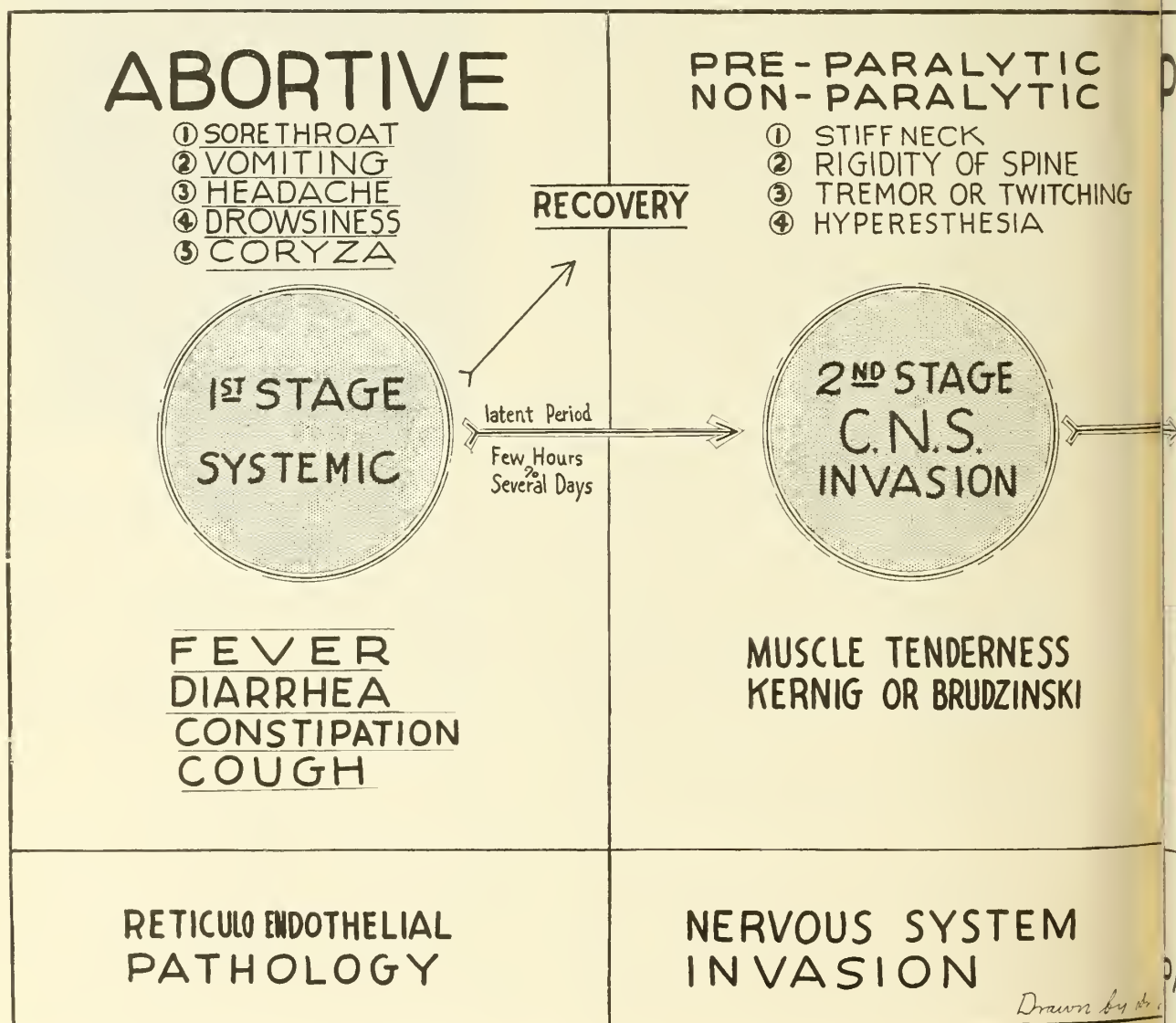
Gastrointestinal Tract.—Here is seen the most marked changes. In the lower ilium and coecum conditions are found strongly resembling typhoid fever, congestion, hyperplasia of lymphoid follicles and Pylers patches. In some cases this process goes on to erosion and ulceration. This marked lymphoid change in the intestinal tract has been the basis for the theory that this portion of the body may be the portal of entry of the causative virus or organism. There is invariably some degree of dilatation of the right side of the heart and usually some myocardial degeneration.

Second, Central Nervous System.—Grossly, congestion and edema of the entire system are found more marked in the

cord and brain stem, but to some degree throughout. Engorgement of meningeal vessels is also present.

(1) Microscopically there is degeneration of the cells of the anterior horn, and in severe cases this degeneration may extend to the cells of the posterior horn. These changes are always the same no matter what portion of the central nervous system is affected; they vary only in degree of severity and in the area involved. The most marked lesions are in the lumbar region. In point of frequency and severity the cervical region is second. The thoracic region rarely ever escapes damage entirely.

Geographical Distribution.—It is world wide in sporadic and endemic form. Epi-



demics are limited to temperate and sub-arctic countries. No major epidemics have occurred in the tropics. All the epidemics in the United States, it is interesting to note, have been relatively localized, never generally distributed throughout the country.

Effect of Season and Climate.—Most of the cases occur in summer and early fall. With the coming of cold weather, epidemics invariably cease.

Period of Incubation.—In majority of cases seven to ten days.

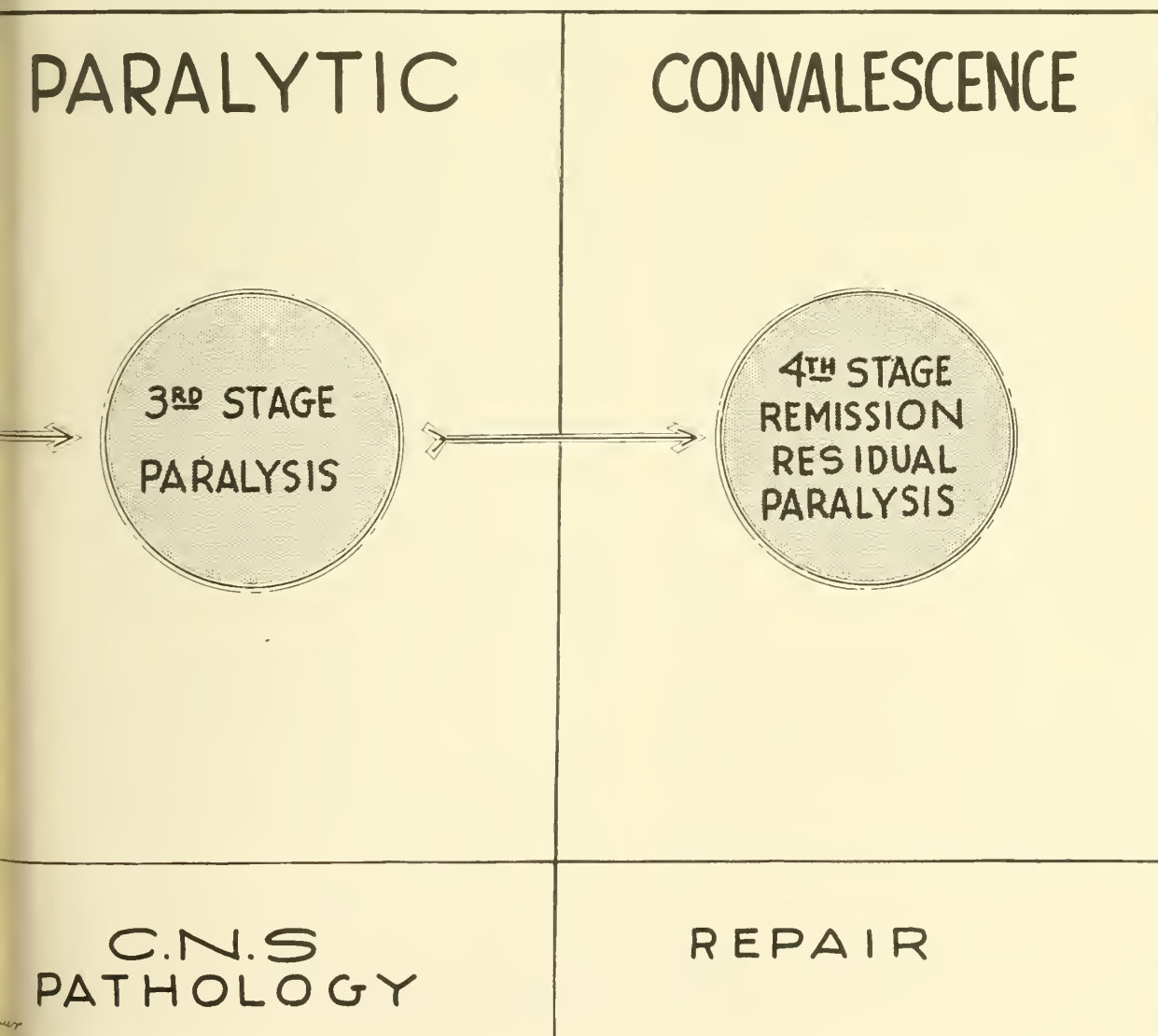
Age of Distribution.—The majority of cases occur under ten years. Youngest case proven to be poliomyelitis two weeks, the oldest forty-four years.

Sex.—Males more often attacked than females.

Race.—Negroes are relatively immune to the disease.

Mode of Transmission.—The pathology in human cases suggests the gastrointestinal tract as a portal of entry. Experimental work with monkeys supports the usually believed nasopharynx route. Our current knowledge indicates that the disease is spread from individual to individual by direct contact droplet infection. Water cannot be entirely disregarded as a means of spread.

Symptomatology.—The disease may be ushered in with a variable number of symptoms. They follow no set rule. The onset may be and in the majority of cases



is sudden. Following this there is usually a rather similar train of symptoms until the paralysis is manifest. However, at times the onset may be long drawn out. First, a few symptoms followed by a period during which the patient is apparently well only to become rapidly worse and on to paralysis. On the other hand, paralysis may be the first evidence of the disease. One need only glance over the formidable list of conditions from which it is necessary to differentially diagnose a typical case of poliomyelitis to recognize that this disease must be placed alongside of typhoid fever and syphilis in the variability of its manifestations.

Onset.—First stage (coinciding with abortive).

Fever.—All observers in all epidemics have agreed that fever is the most constant feature of the early stage.

Pulse.—In this stage has no distinguishing characteristics.

Headache.—Is among the earliest and most prominent symptoms. It may be frontal or occipital and is commonly constant and persistent.

Gastrointestinal Symptoms.—Nausea, vomiting, gastric distress, diarrhea or constipation. Constipation more common than diarrhea.

Respiratory Disturbances.—Included under this head are coryza, cough, and sore throat. These symptoms vary greatly. Some authorities claim that congestion of the pharynx is constantly present.

Drowsiness.—Occasionally this symptom is replaced by nervousness, excitement, and alertness.

Malaise.—Similar to that of influenza infection.

Sweating.—Not at all a constant symptom. Some authors claim it occurs in seventy-five per cent, others in not more than twenty-five per cent.

Discussion.—It will be observed in describing the symptoms of the first stage that they are those of almost any acute generalized infection. There is no means of definitely diagnosing abortive poliomyelitis, and until some diagnostic test along the lines of the Wassermann, Widal, Von Pirquet or the Schick shall have been made, we

cannot know what members of the community have passed through it and acquired an immunity to the disease.

Second Stage.—Preparalytic. In this stage the virus has entered the central nervous system and soon there are definite physical findings which greatly aid in establishing the diagnosis of the case. In the first stage there are no definite physical signs, in the second stage they are present, along with some of the symptoms which may be carried over. Especially fever and headache.

General Appearance.—The face is flushed and there is the appearance of apprehension as evidenced by the expression of fear in the eyes, pupils frequently dilated and conjunctivae red. Prostration is marked and pulse out of proportion to temperature. The patient may be disoriented and puzzled as to what has happened. Tremors and twitchings are often present but rarely a convulsion.

Pain.—Pain is almost always present and may be in the neck, back or extremities. Local pain or muscle tenderness may come before paralysis of that member.

Stiffness of the Neck or Spine.—It is the most outstanding finding at this stage, occurring in over seventy-five per cent of cases. The rigidity of the neck differs from that occurring in meningitis, for it is possible to bring the patient's head forward from the pillow without meeting any resistance until flexion has reached the point of anterior spine flexion, whereupon rigidity promptly occurs.

Weakness.—There may be weakness of a muscle or group of muscles without paralysis noted early.

Reflexes.—Uncertain and unreliable.

The Paralysis.—The spinal paralysis of poliomyelitis is of the flaccid type since the lower motor neuron is involved. It usually occurs during the febrile stage of the disease, but may be delayed as long as ten days. Generally the degree of damage is maximal within a short period of time, but may be delayed, gradual or periods of remission. A remarkable feature of poliomyelitis is the tendency for isolated groups of muscles to be attacked. Muscles supplied by one segment of the cord may be affected, while

those supplied by adjacent segments remain unaffected. The legs are the most common site of the paralysis. It is the usual rule that a limb is not completely paralyzed. The muscles of the trunk may be and often are paralyzed, also the muscles of the abdomen, the intercostals, and the diaphragm.

Landry's ascending type is usually fatal. This type is not very common. It consists of a rapidly progressing paralysis beginning in the legs and involving the trunk and the arms, finally reaching the brain stem and the respiratory center. Death usually occurs in three or four days. Very rarely its progression is the reverse downward, the descending type.

Involvement of the nuclei of the cranial nerves is not uncommon. Here too flaccid paralysis is the result. Bilateral involvement of the cranial nerves is very rare.

Laboratory Aids.—There are no laboratory procedures or tests which are constant for poliomyelitis. The spinal fluid furnishes evidence of the most reliable nature. There is usually an increase in the number of cells. Many other conditions cause a similar increase, but in conjunction with clinical symptoms the cell count is of importance.

Differential Diagnosis.—When the stage of paralysis is reached there is usually very little difficulty in recognizing the disease, but in the abortive preparalytic stages it is a different story. In the absence of an epidemic it is difficult to make a diagnosis until weakness and paralysis are shown. In the early first stages it resembles acute respiratory and gastrointestinal infection. In preparalytic stage tuberculous meningitis, epidemic-meningitis and other forms of meningitis, rheumatic fever, rheumatic torticollis, sepsis, and even acute appendicitis may be simulated.

In the Paralytic Stage.—Peripheral neuritis, birth injuries, injuries to joints, bones, muscles, and other rare conditions must be ruled out.

Prognosis.—According to Wickman, life is in greatest danger between the third and seventh days. Most observers consider the patient to be out of danger eight days after the appearance of the first paralysis, but in view of the experience of late epidemics

this opinion will have to be somewhat qualified. Naturally the paramount question in a paralyzed individual is whether there is any chance of recovery. At one time the paralysis was deemed permanent. Fortunately, we now know this is not true and that many patients even severely paralyzed recover sufficiently to enable them to get about and carry on a gainful occupation. Improvement may be expected over a period of at least two years and no surgical procedure should be resorted to until the two years has elapsed. The electrical reactions are of some prognostic aid. The reaction of degeneration usually appears about a week after paralysis has set in. If there is a failure to respond to the Faradic current, it indicates that the nerve and muscle have degenerated, but does not necessarily mean that paralysis is permanent. Changes in response to the galvanic current, however, are of more serious import, usually indicating permanent changes.

Treatment.—There is no specific treatment for poliomyelitis. All that can be done in the early stages is for relief of symptoms. Relief of pain and good nursing care are the most important.

The Use of Serum.—When the use of convalescent serum was discovered great hopes were had that it would prove of value, not only in prevention but in the treatment. Experimentally in monkeys it has been effective, but clinically the results have been disappointing. Most reliable authorities doubt its value. When the virus of poliomyelitis has produced changes in the central nervous system sufficient to cause symptoms which are adequate to make a diagnosis, it is already too late to expect a curative effect from the injection of serum.

In attempting to produce an artificial immunity, there has been a vaccine prepared from the spinal cord of monkeys dying of poliomyelitis in a manner similar to the way antirabic vaccine is made. Its producers have definitely established immunity in monkeys, but its use in humans has been discouraging. One fatal case occurred six days after the second dose; one twelve days after first dose; two paralytic cases and one fatal case eight days after the first dose; a fatal case nine days after first dose;

another fatal case ten days after first dose; a paralytic case eleven days after the first dose and another paralytic case fourteen days after the first dose.

For detail of cases mentioned see J. A. M. A., December 28, 1935.

Treatment (continued).—Repeated lumbar punctures have been advocated by some as a therapeutic measure on the ground that the edema in and around the cord is thereby lessened and the pressure of the cerebrospinal fluid lowered.

Treatment of Encephalitic Cases.—These cases require special treatment. The common involvement of the muscles of the pharynx concerned with swallowing, and those of the palate concerned with phonation and closing off of the nasopharynx during swallowing, presents a different therapeutic problem. In involvement of the ninth and tenth cranial nerves there results an accumulation of unswallowed secretions in the pharynx with a resultant interruption of inspiration. There is constant danger of mucus being aspirated into the lungs and setting up a terminal pneumonia. Treatment is therefore directed to the removal of the secretions. This may be accomplished to some extent by postural drainage. Of more value perhaps is the fre-

quent suctioning of the posterior pharynx by means of an ordinary operating room aspirator, such as is employed in tonsil operations. Atropine is of aid in drying up the secretions. Because of the danger of aspiration no food should be given by mouth or tube until temperature has reached normal, nutrition being maintained by ten per cent glucose either intravenously or by rectum.

The Respirator.—Much publicity has attended the use of the so-called iron lung and the laity has come to look upon it as a uniformly lifesaving apparatus. As a matter of fact, however, its use is limited to a small and highly specialized group of cases, and although it may prolong life, it does not always ultimately save life. Unfortunately, also, the degree and extent of paralysis of the limbs in the cases suitable for respirator treatment is always extreme, most patients suffering a total quadriplegia. Perhaps the most important advance in the care of individuals affected with paralysis due to poliomyelitis has been the increasing recognition of the fact that this condition is not hopeless, but that much benefit can be obtained by the use of orthopedic treatment. This includes the utilization of proper rest, graded exercise, mechanical braces, hydro-physical therapy and surgical procedures.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATIONDevoted to the Interests of the Medical Profession of Tennessee
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SEPTEMBER, 1936

EDITORIAL**ACTIVITIES OF THE AMERICAN MEDICAL
ASSOCIATION**

Every now and then one hears a doctor who ought to know better say that the American Medical Association is not doing this, that, or the other, or finds fault with some person or some particular activity of the American Medical Association. Before such expressions are made a doctor really should inform himself.

These faultfinders have been fairly numerous since the beginning of the depression.

Fault was found because the American Medical Association did not have the power to influence regulations concerning medical care which were promulgated by departments in Washington.

Fault is found because the American Medical Association could not always influence legislation in the direction it should go, and now and then one alleges that the American Medical Association is doing nothing to combat the advancement of "Red Medicine" in America.

We do not assert that the American Medical Association is perfect. No such thing as a perfect human exists, nor is there a perfect human organization of any character anywhere. We do assert, however, that the American Medical Association is serving the medical profession of America and the public with more diligence and effectiveness than any other organization in the United States or any other simi-

lar organization in any other country in the world. This is due largely to the fact that the American Medical Association is so democratic. It is, in fact, an association of component units. Each unit has equal representation in the legislative body (the House of Delegates) of the American Medical Association.

Several influences are at work to destroy the American Medical Association by fanning the flames of discontent—destroying faith in the integrity and ability of the leaders of the American Medical Association. This is about the most dastardly move made yet by those who wish to establish "Red Medicine" in America.

Like our state organizations, the American Medical Association was not set up primarily for the purpose of exerting political influence. From time to time advice is freely given on medical matters relating to the public health and with reference to legislation bearing upon public health.

It is within recent years that the necessity has arisen for the American Medical Association to exert a combative political influence, not partisan mind you, political only.

Certainly the American Medical Association is not composed of experienced politicians and its influence, in our opinion, would soon become nil if the policies were followed which some would have us follow.

The American Medical Association has sought diligently for the truth even with respect to all forms of socialized medicine. It has found the truth. It has dealt with facts and but for the effectiveness of the American Medical Association in meeting the problems of the day political and otherwise, America might have already had the menace of "Red Medicine."

The American Medical Association then must be judged by its virtues and its faults combined, and at the moment it is vitally necessary that we not allow a minor fault here and there to detract our loyalty from the major virtues and major accomplishments. Eternal vigilance and loyalty is the price we must pay for democracy in medicine in America together with a sane attitude toward the one national medical or-

ganization which represents all and can speak for all without assuming such a prerogative.

INSURANCE MEDICAL DIRECTORIES

The following resolution was presented by the delegates of Arkansas and adopted by the house of delegates of the American Medical Association May 14, 1936:

"WHEREAS, certain commercial interests are publishing medical directories, listing physicians by specialty and otherwise, as available for insurance and compensation work, and other professional services, and

"WHEREAS, participation by listing in these lay publications merely serves for the profit of the promoters, and is furthermore technically indirect solicitation of patients.

"THEREFORE, BE IT RESOLVED, That the Arkansas Medical Society condemns these practices as unethical and forbids its members to continue listing their names in such directories, and

"BE IT FURTHER RESOLVED, That the Arkansas Medical Society requests the house of delegates of the American Medical Association to take similar action."

It seems that the publishers of these directories reap a rich harvest. They sell space in the directory to the doctor and then sell the directory to insurance companies, hotels, etc.

Many doctors have signed up for space in these directories without thinking. The evil of it is apparent. With such a directory on the desk at a hotel or other public place a transient is most likely to call a doctor so listed, and there are many more transients today than heretofore.

An official directory of the American Medical Association is published by the American Medical Association. It contains a proper classification of physicians as to specialties and should be the reference book for every one. This directory costs less than the listing in the special directory and the listing in the American Medical Association directory costs nothing.

This is another case in which a commercial concern makes a sucker out of the doctor.

THE ACCOMPLISHMENT OF PROGRESS WITHOUT THE AID OF LAW

Many people are ready to assert "there ought to be a law" to correct this, that, and a thousand other evils that exist. Such people seem never to recognize the fact that much of the progress of the world has been accomplished without law specifically affecting it, and many times, in spite of law.

To our way of thinking, the medical profession furnishes a glowing example of progress in certain directions without law. That is, without federal or state laws.

Some years ago medical education in America was in a chaotic state. There were institutions of learning designated as "diploma mills." These were evils, inimicable to the public welfare. This situation has been corrected. The organized medical profession corrected it without any law. A council on medical education was set up by the American Medical Association. It was empowered to classify medical schools on the basis of their ability to teach medicine as it should be taught. They were classified into groups A, B, C, etc. The findings of the council are published from time to time. In a little while no students wanted to graduate from a C-grade institution. The inefficient institutions had to die for lack of patronage if for no other reason.

The American Medical Association set up another council known as the Council on Pharmacy and Chemistry. One of its many duties is to analyze drugs and remedies and report its findings to the medical profession.

It soon became necessary for this council to pass upon the claims made by manufacturers in their advertising to promote truth in advertising. Today when the medical profession uses drugs that are council approved they have the highest assurance that can be had in America as to the integrity back of their production. As a result of this agency the overwhelming majority of the best drug manufacturers appreciate the work that has been done by the council. They cooperate with the bureau. As a result the wild ———— claims of drug houses are limited very largely to patented preparations.

This one agency, in our opinion, has accomplished a great deal more good for the public than the federal department of food and drugs, notwithstanding the fact we have no fault to find with the accomplishments of the department.

Certainly there are crooks engaged in the production of drugs who would like to make wild claims and get by with them. There are those who do, but the number is not large.

One frequently sees a strong statement in some drug journal condemning the actions of the Council of Pharmacy and Chemistry.

We must not forget that this council may be and has been sued for libel and all those who charge errors are privileged to go into court and prove their case, but they prefer to spread propaganda rather than furnish proof to a court of justice, which goes to show that propaganda in the United States is actually a menace. No difference what it relates to, if it is propaganda it should be avoided. Probably some of the highest paid individuals today are those engaged in some sort of propaganda activities.

It is well to bear in mind that propaganda in a majority of instances is part truths or distorted truths designed to mislead the reader.

We would urge the medical profession to stand by council approved products. The drug manufacturers deserve the patronage. The public deserves the best products and the Council on Pharmacy and Chemistry deserves our support.

POLIOMYELITIS

Discussions of the subject of poliomyelitis have occupied a great deal of space in the lay press and a fair amount of space in the medical press in recent weeks.

A peculiar emotional reaction takes place in the public mind, it seems, when a case of poliomyelitis is reported. Accurate statistics will show that the number of deaths and disabilities resulting from auto accidents is many times larger than from poliomyelitis. Still the excitement that takes place as a result of a single case of poliomyelitis is far greater than the reaction that takes place from many motor

accidents. It is obvious that our emotions do not follow statistical proportions, nor any other sense of proportion, and still a sense of proportion is the most important sense a person can possess. The loss of a sense of proportion is to lose the rudder that should guide an individual or a community.

The emotions are a very essential part of human nature. Especially is this true when the emotions are kept within reasonable bounds by intelligence. When the emotions become dominant in either an individual or a community there is no telling what may happen.

Fortunately, caution, prudence and conservatism have characterized the attitude of the medical profession toward this so-called epidemic of poliomyelitis. It is a fine thing for the public that this is true.

When doctors are free to give their unbiased judgments in a given medical situation the end results will, as a whole, be for the best public interest.

The emotions of the public have been stirred time and again in recent years by very capable fiction writers attempting to deal with medical subjects.

It is our opinion that this emotional appeal is wearing out to some extent, a sober second thought, born of intelligence, is gradually gaining the ascendancy. The public is beginning to appreciate the fact that the losses that would be involved in a radical change in medical practice would far outweigh any gains, fancied or real.

THE DANGERS OF BARBITURATES

Recently the Tennessee Pharmaceutical Association in convention at Knoxville called attention to the enormous increase in the use of barbiturates.

It was pointed out that a vast majority of these drugs sold were bought across the counter by lay people without a doctor's prescription.

Recently a very reliable druggist who has been in the drug business for more than thirty years told the writer that the sale of these products in his store has quadrupled in the past three or four years. He also stated that he was able to observe unfavor-

able changes in the individuals who use these drugs in large quantities.

The druggists are public-spirited enough that they are not interested in selling a large quantity of these drugs at a profit which may result in real harm to the public.

Certainly the medical profession is not interested in dictating to the public whether they shall have the privilege of buying a drug without the prescription of a physician. It seems high time, however, that the medical profession and the druggist advise people that these drugs cannot be taken at frequent intervals over a long period of time without injury. It may be that the time has come to forbid the purchase of these drugs by lay people without their being prescribed by a physician.

It must be remembered that everything that is potent for good is also potent for evil.

DEATHS

Dr. John K. Crawford, Somerville; Vanderbilt University, Medical Department. 1904; aged 58; died August 7.

Dr. J. T. Freeman, Finley; Mississippi Medical College, Meridian, 1910; aged 50; died August 6, following a short illness.

RESOLUTIONS

On August 14, 1936, the Chattanooga and Hamilton County Medical Society lost one of its oldest members in the death of Dr. Edwin Clinton Anderson. He was a life member of the society and a past president of the East Tennessee Medical Association. He was born in Tecumseh, Michigan, in 1857. He received his medical degree at Cincinnati and Baltimore.

His early practice was conducted at Cleveland, Tennessee, and he moved to Chattanooga in 1889 and for a period of nine years he held the chair of professor of pathology at the Chattanooga Medical College.

In Cleveland, Dr. Anderson married Miss

Mary C. Legg and from that union were born two sons, Edwin M. and Daniel W., and a daughter, the latter being deceased. His wife died about two years ago.

Dr. Anderson's practice was limited almost entirely to gastroenterology and in the conduct of same he utilized every possible diagnostic procedure.

He was a deep student of the science of medicine and possessed one of the largest medical libraries in the city, and he was often requested to review new publications.

Be It Therefore Resolved, That the Chattanooga and Hamilton County Medical Society deeply deplore the passing of Dr. Anderson.

And Be It Further Resolved, That we extend to his bereaved family our sincere sympathy and condolence.

And Be It Further Resolved, That a copy of this preamble and these resolutions be sent to the family of the deceased, a copy spread upon our record book, and a copy sent to the secretary of the state society.

JOHN W. BRADLEY, M.D., *Chmn.*

E. S. BLAIR, M.D.

W. E. ANDERSON, M.D.

H. P. LARIMORE, M.D.

J. B. MCGHEE, M.D.

Memorial Committee.

Approved September 3, 1936.

D. N. WILLIAMS, *President.*

J. MARSH FRERE, *Secretary.*

NEWS NOTES AND COMMENTS

THE AMERICAN BOARD OF INTERNAL MEDICINE (INC.)

The term "specialist" in American Medicine has become cheapened. There are perfectly capable specialists, thoroughly entitled to the designation. Again there are others who apply the term specialists to themselves in order to get the reward from such a designation without earning it.

In the case of internal medicine a board has been formed to pass on the qualifications of specialists in internal medicine. It is formed as a result of the cooperation of the American College of Physicians and the

Section on the Practice of Medicine of the American Medical Association. The organization was completed on June 15, 1936. The following members were elected as the first board: Walter L. Bierring, M.D., Des Moines, Chairman; Jonathan C. Meakins, M.D., Montreal, Vice-Chairman; and O. H. Perry Pepper, M.D., Philadelphia, Secretary-Treasurer.

It will be the function of the board to certify those who are found to be entitled to certification after careful investigation.

The standards set up by the board are reasonable.

Those who wish full information on the subject will communicate with the chairman, Walter L. Bierring, M.D., 408 Sixth Avenue, Des Moines, Iowa.

AMBULANCES

The Memphis and Shelby County Society recently passed resolutions condemning the wholly unnecessary speeding of ambulances over city streets and, also, the use of siren horns on ambulances. The Police Department and all the companies operating ambulances for white patronage, except one, assured the society of their hearty cooperation in the matter.

The Davidson County Medical Society and Nashville Academy of Medicine have been asked by the Nashville Automobile Club to take similar action. The request was considered and favorable action taken at an early September meeting.

One of the Nashville papers has had an editorial favoring such regulations.

It is hoped that in all places where there are ambulances the police will prevent their speeding.

ATTENTION MEMBERS OF MEDICAL OFFICERS RESERVE CORPS

The eighth annual training course for medical department reservists of the army and navy will be held at the Mayo Foundation, Rochester, Minnesota, from October 4 to 17, 1936.

Members of the reserve corps who have had this course heretofore have been highly pleased with it.

Those desiring the course this year should make application at once to Colonel Kent

Nelson, Medical Corps Surgeon, Omaha, Nebraska. It is understood that a limited number can be accommodated.

OUR OWN ESSAYISTS

The average doctor would rather be informed than entertained by the program of his county medical society, provided the information is presented with a freshness and variety which will be stimulating.

This is the reason why the average member will say that the best programs are those presented by the members of his own society.

Papers presented by "amateur" speakers are usually good because they are so natural, no matter if the diction is not quite equal to the polish of an experienced lecturer.

We all know how to say something when we have something to say. The old excuse "I can't make a speech" is really untrue.

We would all get tired quickly of whipped cream and long for some good old-fashioned meat in our mental diet. Don't think you need the skill of an orator if you are asked to present a paper or lead a discussion. Just have something to say and say it. —*The Mississippi Doctor*, August, 1936.

The McMinn County Medical Society conducted a clinic for six weeks in July and August. Total typhoid inoculations given were 4,569.

The Physicians and Surgeons Hospital at Cleveland has recently been enlarged and remodeled. Six rooms were added. Some of the rooms were air-conditioned. A full time laboratory technician was employed.

WOMAN'S AUXILIARY

President-----Mrs. Theodore Morford
Nashville

President-elect-----Mrs. W. T. Black
Memphis

Press and Publicity-----Mrs. Oscar Nelson
Nashville

Just as the month of September sees the annual trek of our younger generation back

to the schoolroom and the task of learning the three R's, "Readin, Ritin, and Rithmatic," so the minds of their mothers turn to the more serious duties of club work and the promotion of the three A's, Auxiliary, Activities and Association. I hope that we all return to our duties with that same zest of enthusiasm which they display.

The officers of the state auxiliary have been announced in a previous issue of the JOURNAL. I would like at this time to introduce our group of very capable chairmen:

Organization—Mrs. W. T. Black, 1284 Peabody Avenue, Memphis.

Research—Mrs. Jesse Hill, 4323 Lyons View, Knoxville.

Parliamentarian—Mrs. W. S. Nash, Cherokee Blvd., Knoxville.

Public Relations—Mrs. G. A. Williamson, Laurel Avenue, Knoxville.

Program—Mrs. R. G. Reaves, 120 Hillsboro Heights, Knoxville.

Exhibits—Mrs. Frank Fessey, Franklin Road, Nashville.

Finance—Mrs. W. C. Bilbro, 3104 West End Avenue, Nashville.

Archives—Mrs. W. W. Wilkerson, Jr., Curtis Wood Lane, Nashville.

Jane Todd Crawford—Mrs. J. J. Shea, 2335 Belvedere, Memphis.

Hygeia—Mrs. O. W. Hyman, 437 Stonewall, Memphis.

Revisions—Mrs. J. T. Fraser, 1930 Lyndale, Memphis.

Legislation—Mrs. D. H. James, 754 Cypress Drive, Memphis.

With these chairmen to direct the various channels of our work the auxiliary cannot help but go onward and upward.

The field of auxiliary work offers such a wealth of opportunity for service to the profession of our husbands. And after all isn't the most vital thing in our lives that which brings us closer to the workaday world of our husbands? There is a service each of us can render. Let us find our place.

Medical auxiliary work can be likened to the axle of a wheel. Our members are the spokes that form the connecting link with numerous other clubs which absorb our time and interest. We form the nucleus

from which generates well planned health programs and authentic health information. These in turn find their way more effectively and more judiciously into lay groups.

Let each new officer pledge herself to be an active officeholder; each chairman to promote constructive work; and each auxiliary member to be a more interested and influential member. With this determination foremost in our minds our influence will be endless.

I wish for all of you success and happiness in your work.

Most sincerely,

YOUR PRESIDENT.

MEDICAL SOCIETIES

Campbell County:

The Campbell County Medical Society met at the Glanmorgan Hotel in Jellico, August 27. The following members were present: Drs. J. L. Heffernan, J. P. Lindsey, C. E. Ausmus, W. D. Gibson, G. B. Brown, Harry W. Hollingsworth, and R. J. Buckman. Dr. F. H. Rogers of Clairfield and Dr. Paul Mapother of Louisville, Kentucky, were welcome visitors.

This was a business session and there was no essayist.

Dr. D. W. Moore, of Jellico, was honored by having conferred on him an honorary life membership in the society.

Dr. A. A. Baird, the society's president, who was reported moving to Kentucky in last month's report, has moved back to Tennessee and is in practice at his home in Jacksboro.

Davidson County:

September 8—"Premature Infants." A report based on a study of 233 cases, by Dr. T. Fort Bridges. Discussion led by Dr. M. S. Lewis.

September 15—"Surgery of the Sympathetic Nervous System," by Dr. T. D. McKinney. Discussionist, Dr. A. W. Harris.

September 22—"Secondary Perineorrhaphy at Time of Subsequent Delivery," by Dr. Hamilton Gayden.

September 29—Dr. Kirby Howlett, Jr., will be the guest speaker.

COMMITTEES

The following is a list of the standing committees of the Tennessee State Medical Association provided for in the constitution and by-laws and appointed by the proper authority, together with some special committees appointed under the authority of a resolution by the House of Delegates.

Some of the committees are appointed for a definite period. In such instances the appointment of the committeeman expires with the meeting of the House of Delegates in the year stated opposite his name.

COMMITTEE ON SCIENTIFIC WORK

H. H. Shoulders, Chairman, Nashville.
A. F. Cooper, Memphis.
Frank Harris, Chattanooga.
A. H. Lancaster, Knoxville.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

L. W. Edwards, Chairman, Nashville (1939).
E. W. Cocke, Bolivar (1941).
Battle Malone, Memphis (1940).
Tom Barry, Knoxville (1938).
T. R. Ray, Shelbyville (1937).

LIAISON COMMITTEE

W. C. Dixon, Chairman, Nashville (1941).
W. P. Wood, Knoxville (1940).
Hiram A. Laws, Chattanooga (1939).
Tom Mitchell, Memphis (1938).
J. L. Raulston, Knoxville (1937).

STATE TUBERCULOSIS HOSPITAL COMMISSION

W. S. Rude, Chairman, Ridgeway.
O. N. Bryan, Nashville.
C. M. Oberschmidt, Memphis.
J. L. Hamilton, Chattanooga.

HOSPITAL COMMITTEE

D. R. Pickens, Chairman, Nashville.
E. H. Baird, Dyersburg.
H. Quiggs Fletcher, Chattanooga.
Kyle Copenhaver, Knoxville.
H. B. Everett, Memphis.
Lee Gibson, Johnson City.

COMMITTEE ON INSURANCE

A. F. Cooper, Chairman, Memphis.
C. M. Hamilton, Nashville.
S. R. Miller, Knoxville.

COMMITTEE ON MEDICAL DEFENSE

S. R. Miller, Chairman, Knoxville.
H. B. Everett, Memphis.
H. M. Tigert, Nashville.

ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

Not yet appointed.

SUPERVISORY COMMITTEE

(Representing the Tennessee State Medical Association)

J. R. Reinberger, Memphis.
O. S. Warr, Memphis.
F. B. Bogart, Chattanooga.
J. O. Manier, Nashville.

COMMITTEE ON EDUCATION

O. S. Warr, Chairman, Memphis (1938).
R. B. Wood, Knoxville (1938).
W. G. Kennon, Nashville (1937).
J. Marsh Frere, Chattanooga (1937).
W. O. Baird, Henderson (1939).
J. M. Lee, Nashville (1939).

The following committees are expected to serve under the supervision of the Committee on Education:

(A) COMMITTEE ON MATERNAL WELFARE

J. R. Reinberger, Chairman, Memphis.
M. S. Lewis, Nashville.
H. B. Hewitt, Chattanooga.
Andrew Smith, Knoxville.

(B) COMMITTEE ON CHILD WELFARE

W. D. Anderson, Chairman, Chattanooga.
Oliver Hill, Knoxville.
H. G. Bradley, Nashville.
W. L. Rucks, Memphis.

(C) CANCER COMMITTEE

Ralph Monger, Chairman, Knoxville.
S. J. Sullivan, Cleveland.
Howard King, Nashville.
H. S. Shoulders, Nashville.
J. W. McClaran, Jackson.
Frank Smythe, Memphis.

(D) COMMITTEE ON PHYSICAL THERAPY

A. H. Meyer, Chairman, Memphis.
W. E. Van Order, Chattanooga.
J. F. Hamilton, Memphis.
R. W. Billington, Nashville.
J. P. Gilbert, Nashville.

LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. W. L. Williamson, 915 Madison Avenue, Memphis.
 Vice President for West Tennessee—Dr. J. E. Powers, Jackson.
 Vice President for Middle Tennessee—Dr. J. O. Walker, Franklin.
 Vice President for East Tennessee—Dr. Lee K. Gibson, Johnson City.
 Secretary—Editor—Dr. H. H. Shoulders.
 Assistant Secretary—Editor—Dr. W. M. Hardy.

TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.
 Dr. A. F. Cooper, Goodwyn Institute Building, Memphis.
 Dr. E. R. Zemp, Walnut Street, Knoxville.
 Dr. Franklin B. Bogart, Medical Arts Building, Chattanooga.
 Dr. John B. Steele, Volunteer Building, Chattanooga.

COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.
 Second District—Dr. S. R. Miller, Knoxville.

Third District—Dr. Hiram A. Laws, Jr., Chattanooga.
 Fourth District—Dr. J. T. Moore, Algood.
 Fifth District—Dr. John W. Sutton, Petersburg.
 Sixth District—Dr. L. W. Edwards, Nashville.
 Seventh District—Dr. C. D. Walton, Mt. Pleasant.
 Eighth District—Dr. J. R. Thompson, Jackson.
 Ninth District—Dr. E. H. Baird, Dyersburg.
 Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—

Dr. E. G. Wood, Knoxville; East Tennessee.
 Dr. H. H. Shoulders, Nashville; Middle Tennessee.
 Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—

Dr. E. T. Newell, Chattanooga; East Tennessee.
 Dr. J. O. Manier, Nashville; Middle Tennessee.
 Dr. E. C. Ellett, Memphis; West Tennessee.

OFFICERS OF COUNTY MEDICAL SOCIETIES

COUNTY	PRESIDENT	VICE PRESIDENT	SECRETARY-TREASURER
Anderson	Edward Dickson, Coal Creek	W. B. Barton, Briceville	J. S. Hall, Clinton
Bedford	Alfred Farrar, Shelbyville	J. W. Reed, Belfast	W. H. Avery, Shelbyville
Blount	L. C. Olin, Maryville	H. A. Callaway, Maryville	W. C. Crowder, Maryville
Bradley	J. L. McClary, Cleveland	W. C. Stansberry, Charleston	Claud Taylor, Cleveland
Campbell	A. A. Baird, Pruden	M. L. Davis, Caryville	R. J. Buckman, LaFollette
Carroll	E. W. Hillsman, Trezevant	J. B. Shoun, Elizabethton	J. H. Williams, McKenzie
Carter	E. T. Pearson, Elizabethton	J. B. Shoun, Elizabethton	E. L. Caudell, Elizabethton
Chester, Henderson, and Decatur	C. H. Johnson, Lexington	J. L. McMillen, Decaturville	L. C. Smith, Henderson
Coke	Drew A. Mims, Newport	Chas. Ruble, Newport	J. E. Hampton, Newport
Cumberland	E. W. Mitchell, Crossville	H. L. Douglas, Nashville	V. L. Lewis, Crossville
Davidson	H. S. Shoulders, Nashville	John E. Frazier, Newbern (Dyer)	J. P. Gilbert, Nashville
Dickson	L. F. Loggins, Charlotte	R. W. Griffin, Tiptonville (Lake)	R. P. Beasley, Dickson
Dyer, Lake, Crockett	R. C. Newkirk, Tiptonville	Leon Pope, Grand Junction	C. L. Denton, Dyersburg
Fayette-Hardeman	L. D. McAuley, Oakland	A. H. Crouch, Forbus	A. Richards, Bolivar
Fentress	C. A. Collins, Wilder	A. P. Smith, Winchester	J. P. Sloan, Jamestown
Franklin	W. F. Smith, Decherd	H. P. Clemmer, Milan	John M. Hardy, Sewanee
Gibson	L. H. Montgomery, Trenton	J. G. Waldrop, Lewisburg	F. L. Roberts, Trenton
Giles	R. E. Warren, Pulaski	R. S. Cowles, Greeneville	Roscoe Faulkner, Ass't Sec., Trenton
Greene	N. H. Crews, Greeneville	O. H. Clements, Palmer	T. F. Booth, Pulaski
Grundy	U. B. Bowden, Pelham	W. E. Howell, Morristown	C. P. Fox, Jr., Greeneville
Hamblen	P. L. Brock, Morristown	E. A. Gilbert, Chattanooga	T. F. Taylor, Monteagle
Hamilton	D. M. Williams, Chattanooga	J. H. Taylor, Morris Chapel (Hardin)	J. F. Campbell, Morristown
Hardin, Lawrence, Lewis, Perry, and Wayne	W. E. Boyce, Flatwoods	J. W. Danley, Lawrenceburg (Lawrence)	J. Marsh Frere, Chattanooga
Haywood	A. H. Sorrell, Brownsville	Paul Wiley, Hohenwald (Lewis)	O. H. Williams, Savannah
Henry	A. F. Paschall, Puryear	W. E. Turner, Lobelville (Perry)	J. W. Danley, Lawrenceburg (Lawrence)
Hickman	L. F. Pritchard, Only	D. L. Woods, Waynesboro (Wayne)	Paul Wiley, Hohenwald (Lewis)
Humphreys	J. D. Quarles, Whitleyville	John C. Thornton, Brownsville	W. E. Turner, Lobelville (Perry)
Knox	M. S. Roberts, Knoxville	Eloy Scruggs, Paris	D. L. Woods, Waynesboro (Wayne)
Lauderdale	Thos. F. Pipkin, Henning	R. C. Gaw, Gainesboro	Roy M. Lanier, Brownsville
Lincoln	H. K. Alexander, Fayetteville	John R. Smoot, Knoxville	R. Graham Fish, Paris
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Madison	J. C. Pierce, Mercer	R. E. McCown, Fayetteville	W. W. Slayden, Waverly
Maury	D. B. Andrews, Columbia	P. East, Lafayette	F. B. Clark, Gainesboro
McMinn	John R. Smith, Selmer	John E. Powers, Jackson	Jesse C. Hill, Knoxville
McNairy	T. M. Roberts, Sweetwater	O. C. Fowler, Spring Hill	Thos. E. Miller, Ripley
Monroe	F. A. Martin, Cumberland City	H. C. Busby, Columbia	M. F. Brown, Fayetteville
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Obion	W. Y. Gilliam, Copperhill	G. B. Curry, Selmer	S. M. Herron, Jackson
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			A. F. Richards, Sparta
			K. S. Howlett, Franklin
			R. B. Gaston, Lebanon

Dyer, Lake, and Crockett Counties:

After our usual two months' summer vacation the society was called to order and the following scientific program thoroughly enjoyed:

"Trachoma in Dyer County," by Dr. J. E. Wilson, Nashville.

"Preoperative Treatment of Acute Abdominal Diseases," by Dr. M. B. Hendrix, Memphis.

"Lobar Pneumonia," by Dr. Guy Campbell, Memphis.

"Hematuria," by Dr. I. G. Duncan, Memphis.

C. L. DENTON, *Secretary*.

Giles County:

Dr. J. J. Ashby, of Nashville, was the speaker August 20 at the regular meeting of the Giles County Medical Society. His subject was "Aftertreatment of Infantile Paralysis."

Greene County:

At the August meeting of the Greene County Medical Society two interesting papers were presented.

Dr. C. P. Fox read a paper entitled, "Reminiscences of Fifty Years of Practice." He traced the changes which have occurred during the fifty years of his active practice and showed how radically the physician and the teaching of medicine have changed during this period.

Dr. Jim Campbell chose as the subject of his paper, "The History of Medicine." He confined himself to the period which embraced the practice of medicine and surgery from earliest antiquity up to the time of Hippocrates. Dr. Campbell told how during these early days the healing art reached a standard which at one time was high even when viewed from our present day knowledge.

Members of the society present were as follows: Drs. L. E. Dyer, W. T. Mathes, Jim Campbell, R. S. Cowles, J. B. Bell, Hal Henard, L. E. Coolidge, H. W. Fox, N. H. Crews, M. A. Blanton, I. E. Phillips, and C. P. Fox, Jr.

Hamilton County:

The next five programs of this society are as follows:

September 17 — "Diverticulum of the Cardiac End of the Stomach," by Dr. Marsh Frere. "General Paralysis of the Insane," by Dr. J. B. Swafford.

September 24 — "The Functions of a Children's Hospital," by Dr. W. D. Anderson. "Pranks in Pediatrics," by Dr. J. B. Philips.

October 1—"Important Points in Prostatic Surgery," by Dr. G. Madison Roberts. "Arthritis," by Dr. W. A. Reed.

October 8 — "Fractures of the Distal Third of the Forearm," by Dr. J. J. Armstrong. "The Treatment of Hyperthyroidism," by Dr. W. D. L. Record.

October 15—"Further Consideration of the Cause and Treatment of Neoplastic Diseases," by Dr. S. S. Marchbanks.

Washington County:

On September 3 Dr. Lee K. Gibson spoke on "Thyroid Diseases" and the discussion was opened by Drs. Creech and Hankins. Dr. E. T. West's subject was "Cancer of the Rectum and Sigmoid" with discussion opened by Drs. Budd and Moss.

A good audience enjoyed the excellent program.

Wilson County:

The Wilson County Medical Society met August 6 and heard a very interesting paper by Dr. R. Floyd Payne. The title of the paper was "Reaction Immunity." It discussed the various actions and reactions of a number of toxins, antitoxins and serums.

The active members are Drs. L. D. Allen, Smithville; J. L. Ames, J. S. Campbell, J. R. Doak, F. B. Dunklin, R. B. Gaston, C. W. Huffman, R. E. Johnson, R. Q. Lillard, J. J. McFarland, S. B. McFarland, B. W. Patton, R. F. Payne, B. S. Rhea, L. L. Tilley, M. H. Wells, W. R. Winter, and C. V. Young.

OTHER MEDICAL SOCIETIES

THE MISSISSIPPI VALLEY MEDICAL SOCIETY

The second annual meeting of the Mississippi Valley Medical Society will be held at Burlington, Iowa, September 30, October 1-2. The entire meeting, including the technical and scientific exhibits, will be held on the mezzanine floor of the modern 300 room Hotel Burlington. There will be morning, afternoon and evening sessions and the complete program has been especially arranged to appeal to the general practitioner.

There will be over sixty lectures, demonstrations, etc., for the full three day session. All ethical physicians are cordially invited to attend. A detailed program may be obtained from Harold Swanberg, M.D., Secretary-Treasurer, 211-224 W. C. U. Building, Quincy, Illinois.

INTERNATIONAL MEDICAL ASSEMBLY

At St. Paul on October 10-17, the Interstate Postgraduate Medical Association of North America will hold its meeting. The program is such as to appeal to all medical men and women. Hotel reservations can be secured by writing Dr. L. R. Critchfield, 372 St. Peter Street, St. Paul, Minnesota.

If you have not received your program write Dr. William B. Peck, Managing Director, Freeport, Illinois.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

The Meaning of the Phrase "A Good Anesthesia."
Robt. L. Charles, Current Researches in Anesthesia and Analgesia, July-August, 1936.

Tried anesthetics should not be discarded in favor of new agents until these new agents are observed in centers where there is a large amount of surgical material. An anesthetist administering to private patients should never experiment. There are two classes of anesthetists—those who are afraid and those who are overconfident and careless.

A good anesthesia from the standpoint of the surgeon is not always good for the patients as efforts to produce relaxation in certain conditions are absolutely dangerous to the patient. Anesthetist and the surgeon should cooperate. The anesthetic used should be best suited for the patient. Patient should be interviewed and examined previously to the operation.

The ideal anesthesia is one that produces the minimum of shock, fewest aftereffects, quiet induction, and least interference with respiration, pulse, and color. Patients withstand anesthetic agents better if they are given according to the "Law of Anesthetic Accommodation"; namely, "living units of the animal body will more readily adjust themselves to altered conditions when those conditions are applied gradually."

Concentration of anesthetic agents are more often responsible for damage to organs than the length of the anesthesia. All anesthetics are dangerous, but the dangers may be minimized by employment of many precautions prior to, during, and following anesthesia.

DERMATOLOGY

By E. E. BROWN, M.D.
Doctors Building, Nashville

Sodium Thiosulphate in the Treatment of Scabies.
George V. Kulcar, M.D., and Willard M. Meininger, M.D., San Francisco, Archives of Dermatology and Syphilology, August, 1936.

Attention is called to the disagreeable feature of most medication being in the form of an ointment with the strong odor of sulphur and the necessity of keeping the body covered for twenty-four hours or longer.

They describe and recommend the treatment of Ravant and Mahieu, the basis of which is the precipitation of colloidal sulphur on the skin. The treatment is carried out as follows: Direct patient to take bath with soap and water and dry thoroughly; apply forty per cent aqueous solution of sodium thiosulphate over entire body; wait fifteen minutes and apply four per cent HCl in same manner; one hour later and the following day repeat the procedure; on the third day have the patient take a bath and change wearing apparel and bed linens.

They report on 100 scabetic patients. Fifty were treated by this method and fifty with ointments. Their conclusions are that the former method gave a larger percentage of cures with less secondary dermatitis.

NOTE: For many years I have used a method almost identical with this, and I have found it very successful. It is more pleasant than most other treatments and it can be improved upon by the use of rose water or some other pleasant odor.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 316 Doctors Building, Nashville

Cervical Dilatation in Dry Labor and After Deliberate Early Rupture of the Membranes. Authur G. King, American Journal of Obstetrics and Gynecology, 32: 201, August, 1936.

An investigation of 1,001 uncomplicated full-term parturitions shows forty per cent enjoyed intact membranes until complete dilatation of the cervix, whereas thirty-one per cent ruptured the membranes before onset of labor, these being classified as dry labors. The remaining twenty-nine per cent was made up of those whose membranes were intact only to a dilatation of four to seven centimeters.

No light was thrown on the etiology of rupture of the membranes. The duration of labor was studied from four points of view and the significant averages of the length of labor showed dry labor to be shorter than the controls by two hours for primiparas and 2.4 hours in multiparas.

The morbidity was essentially the same in all groups. The incidence of forceps intervention was 16.3 per cent in the control group or wet labors, against 10.6 per cent in the dry labors. Fetal mortality was unaffected.

The author supports the explanation of cervical dilatation, that in labor the cervix is gradually retracted over the head by muscular action alone. Inasmuch as in this study the membranes proved to be unnecessary for a safe, easy and short labor, the theory that dilatation is accomplished by the hydrostatic wedge is incompatible.

The Le Fort Colpocleisis. Fred L. Adair, L. DaSef, American Journal of Obstetrics and Gynecology, 32: 218, August, 1936.

This is a report of thirty-eight cases of partial or complete genital prolapse in older women who have been treated at the Chicago Lying-In Hospital by some modification of the Le Fort Colpocleisis. Although this operation is seldom performed, it is applicable to a difficult group of cases of relaxation of the outlet. The operation consists of a medial obliteration of the vagina.

The technic of the operation as described by Le Fort is given. The prerequisites for the operation are: sex life of the patient should be unimportant and the husband's consent should be obtained. The cervix corpus and adnexa should be free of pathology. Vaginitis and erosions of the cervix should be eliminated.

After observation over a period of one year or longer satisfactory final results were obtained in ninety-five per cent of the cases.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

Eye Changes in Hypertensive Toxemia of Pregnancy. A. V. Hallum, American Journal of Ophthalmology, August, 1936.

In a study of 300 cases of varying degrees of hypertensive toxemia, some ocular fundus change was found in 62.1 per cent (retinitis in 9.5 per cent) of the pre-eclamptic patients, in eighty-four per cent (retinitis in 11.6 per cent) of the nephritic patients, and in 95.2 per cent (retinitis in forty-five per cent) of the eclamptic patients. There was a striking increase in frequency of eye changes in direct proportion to the severity of the hypertension. The maternal mortality was two, or 0.7 per cent. Both patients were primiparas and eclamptic. Bilateral detachment occurred in six cases, or two per cent, and the retinas were completely reattached within ten days after delivery. The author concludes, among other things, that the ophthalmoscope should be rated next to the sphygmomanometer as an instrument of diagnostic importance in management of cases of hypertensive toxemia of pregnancy. Of this series of 300 cases 76.3 per cent showed fundus abnormalities, arterial in 62.5 per cent and retinitic in 13.2 per cent.

**OTOLOGY, LARYNGOLOGY,
RHINOLOGY**

By W. W. POTTER, M.D.
Medical Building, Knoxville

The Fifth, Ninth, and Tenth Nerves in Bronchial Asthma. Kenneth Phillips, M.D., 45: 373, June Annals of Otology, Rhinology, and Laryngology.

The author begins his discussion by offering the opinion that, up to the present time, bronchial asthma, as a problem, has had and still has the profession, as a whole, in a state of confusion. The investigation covers 1,500 consecutive cases, including a wide variation in age, sex, type, and duration. He observes that in ninety-two per cent of the entire group the attacks were initiated, became worse, and reached the peak of severity between midnight and morning. The author maintains that it is evident from both clinical and experimental work that there exists a neuroanatomic reflex connection between the bronchioles and the sensory terminals of the fifth, ninth, and tenth cranial nerves. Since both atropin and section of the vagi in the animals will abolish the reflex, it would seem that the tenth nerve is the efferent pathway. However, in relation to the problem of bronchospasm, it is important to recall that stimulation of the cut central vagus would produce the same reflex through the opposite side.

The vagus trunk carries afferent as well as efferent fibres, and the above conditions can and do undoubtedly act as trigger areas. The author

anticipates the question as to why we obtain a spectacular result by proper eradication of nasal pathology in some asthmatics and then see in succession a hundred patients with identical pathology who never would manifest bronchospasm. He answers this in two ways. "First of all, it indicates that in the asthmatic a systematic metabolic upset is present. The rhinologist whose only resource is mutilating surgery in these cases is just as helpless as the internist whose only hope is serums and vaccines." Both are extremists of a different type, both have done harm, and both are responsible for the terrible, pessimistic attitude among both doctors and laymen. Cooperation between the nose and throat specialist and the internist is necessary to properly combat the problem.

PEDIATRICS

By JOHN M. LEE, M.D.
Doctors Building, Nashville

Gonorrheal Vaginitis—Results of Treatment with Different Preparations and Amounts of Estrogenic Substances. Robert M. Lewis, M.D., New Haven, Connecticut, and Eleanor L. Adler, M.D., New York, *The Journal of American Medical Association*, June 13, 1936.

The treatment of gonorrheal vaginitis in children with local antiseptics has proven difficult and unsatisfactory. Pediatric literature of recent years contains many reports of the use of such estrogenic substances as amniotin, theelin, etc., in this condition with varying results. These substances change the thin vaginal mucosa of the child to the thicker and partly cornified structure of the adult, thus producing a mucosa less favorable to the growth and invasion of the gonococcus.

The authors first treated sixty-six patients with 800 international units of amniotin daily by hypodermic injection and were not satisfied with the results. Better results were obtained in cases to whom 2,400 units were given daily.

Later vaginal suppositories of amniotin (originally 600 international units and later 1,000 units) were found to be very effective in these cases. In thirty-three cases so treated thirty gave negative smears in 20.7 days. Two cases required twelve weeks of treatment, and five had recurrences. The recurrences yielded to further treatment. Clinical improvement with cessation or decrease of discharge is usually noted after from fourteen to eighteen days of treatment.

It is felt that the major factor in this treatment is the fact that the estrogenic substance promptly changes the reaction of the vaginal secretions from neutral or alkaline to acid, a medium in which the gonococcus cannot live. In the few cases that failed to show this change in reaction of vaginal secretion, the infection continued. A simple method for determining the reaction of the vaginal secretions is given.

The use of estrogenic suppositories in the treat-

ment of gonorrheal vaginitis is simple, painless, and may be easily carried out at home. The suppository is inserted into the vagina each night until two weeks after the discharge ceases and smears are free of gonococci. The authors noted no stimulation of mammary development, uterine bleeding or other ill effect and think the treatment safe and harmless and the most effective method known for the treatment of gonorrheal vaginitis in children.

ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.
Medical Arts Building, Chattanooga

A Study of a Series of Menopausal Cases After Irradiation of the Pituitary Gland. Conrad A. Collins, M.D., F.A.C.S., Leon J. Menville, M.D., F.A.C.R., and E. Perry Thomas, B.S., M.D., New Orleans, Radiology, Volume 26, Number 6, June, 1936.

The opinion is expressed that the menopausal symptoms which commonly occur, whether the change occurs naturally or is produced artificially either by surgery or irradiation are due to a hyperfunction of the pituitary gland, initiated by a removal of the ovarian secretion.

A series of forty-seven cases are reported. Of these twenty-four had an artificial menopause and in twenty-three it was spontaneous. The common symptoms were flushes, dizziness, sweating, headaches, and nervousness, usually three or four in combination.

These cases were treated with roentgen rays over the pituitary gland, a very small dose being used; 148 r, measured with back scattering, was administered to each side of the head over the pituitary gland through a small portal. It was estimated that the pituitary gland received about 104 r. This was repeated after an interval of three weeks. The factors used were 120 K. V. P., 5 ma., .025 mm. Cu and 1 mm. Al, 30 cm. distance.

Of the forty-seven cases treated forty or eighty-five per cent obtained excellent results, the symptoms either entirely disappearing or becoming so mild and infrequent as to cause no discomfort or inconvenience.

In four cases (nine per cent) fair results were obtained. In these cases, although most of the symptoms disappeared, one symptom, usually the headache, persisted. It is the intention of the authors to reradiate such cases in the future. In three cases (six per cent) no improvement was noted following radiation.

CONCLUSION

(1) The menopausal syndrome is primarily the result of an excess of prolactin secreted by the anterior hypophysis initiated by the withdrawal of the ovarian hormone.

(2) Irradiation of the hypophysis for climacteric symptoms produces excellent results in the majority of cases.

(3) Irradiation of the pituitary in the dosage given will not produce any harmful results.

ABSTRACTOR'S NOTE: The cases here discussed represent a considerable group, the management of which in the past has often been difficult. The excellent results here reported warrant widespread use of roentgen therapy. The dose of roentgen irradiation given is small and may be administered by any competent radiologist possessing a moderate voltage machine.

SURGERY—GENERAL AND ABDOMINAL

By **BATTLE MALONE, II, M.D.**
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Disseminated Polyposis of the Colon—A New Surgical Treatment in Selected Cases. Charles A. Mayo, M.D., and E. G. Wakefield, M.D., Rochester, Minnesota, *Journal American Medical Association*, Volume 107-5.

In the cases reported in this paper polyps are considered in two classes, the congenital or adolescent group, and the post-inflammatory and true polyps. The authors briefly review the history of this condition, referring to its rather frequent occurrence in families. The disease usually manifests itself at about the age of thirty years, but may occur earlier. Polyps of the intestine may prove serious in four ways: (1) Bleeding from infection or ulceration; (2) they may produce intestinal obstruction; (3) they may cause intussusception; (4) they may become malignant. In some cases of severe colitis the colon may have a polypoid appearance. Likewise, polyps of the colon which have undergone degeneration and widespread infection may be indistinguishable from ulcerative colitis.

As to the incidence of polyps found in patients examined in the section on proctology at the Mayo Clinic, four per cent had one or more polyps that could be visualized with the sigmoidoscope and only 0.04 per cent of this group had disseminated polyposis. In the nineteen cases reported disseminated polyposis extended from the terminal ileum to the rectum. The usual symptoms were intermittent blood in stools, diarrhea with exacerbations, cramp-like pain in the lower abdomen increased during and after bowel movements, and varying degrees of anemia. Two of the nineteen cases are summarized.

The diagnosis of the condition is made from proctoscopic and digital examinations and by roentgenologic investigation. The two conditions to be differentiated are cancer and ulcerative colitis. The treatment of the disseminated polyposis is a surgical problem. Ileostomy merely prolongs an unfortunate existence and even when this is followed by total colectomy the risk is great and the results are not very satisfactory. The treatment described in this paper is carried out in five stages. First, the rectum and rectosigmoid are cleared of all polyps by repeated fulguration by diathermy.

After the inflammation caused by the fulguration has subsided, the second stage is performed which consists of end-to-side ileosigmoidostomy and right hemicolectomy, and the formation of a colostomy with the cut in of the transverse colon. A rectal tube is fixed in the rectum at this time. As soon as conditions are favorable the remaining transverse and descending colon are removed through a left rectus incision, leaving the remaining cut end of the colon to form a colostomy, through which stoma polyps may be fulgurated at a later date, this being the fourth stage. The fifth step consists of closure of the colonic stoma. The foregoing procedures cannot be carried out where secondary inflammation has involved the entire colon. In such cases ileostomy and total colectomy in stages is the better procedure and is done after the inflammation has subsided.

SYPHILOLOGY

By **E. G. CLARK, M.D.**
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Standard Treatment Procedure in Early Syphilis. Stokes, Cole, Moore, O'Leary, Wile, Parran, Vonderlehr, Usselton, *Veneral Disease Information*, April, 1934.

The presentation of a uniform type of procedure in the treatment of early syphilis is the product of a genuinely massive investigation of world-wide scope, sponsored by the League of Nations Health Organization and carried out in the United States by the combined efforts of the United States Public Health Service, a group of five university clinics aided by the generosity of several donors. The material embraces the records of 75,000 cases of syphilis, of which 3,244 were examples of early syphilis followed for six months or more, and 383 followed for as long a period as five years or more.

More cures were obtained when treatment was begun in the seronegative primary stage with diagnosis by dark field examination or other identification of the *Treponema pallida*. When treatment was begun after the Wassermann became positive or after secondaries developed, there was a loss in cures of fourteen to twenty per cent by the best method of treatment.

Fixed positive blood tests developed in 3.8 per cent when treatment was begun in the seronegative primary stage, in 14.5 per cent in the seropositive stage, and in 13.3 per cent in the early secondary stage. Thirty per cent of the fixed positives in early syphilis proved to have neurosyphilis.

No patient with early syphilis should be treated by the sole use of an arsenical.

Infectious relapse occurred in twelve per cent of the 3,244 patients. Thirty-five per cent of these received less than five injections of arsphenamine, and eighty-one per cent had fifteen or less injections of an arsphenamine. Of those who had twenty or more injections, only thirteen per cent ever sustained an infectious relapse. Thus twenty injections of an arsphenamine become the least

number needed in the individual case to control the danger he represents to his contacts and to the public health.

It is stated with positiveness that the old practice of administering treatment in early syphilis by fits and starts, conditioned on the Wassermann report of the blood, is pernicious; that even the introduction of a few weeks of complete rest from treatment in the management of the first eighteen months of the disease is likely to be profoundly injurious; and that no rest intervals and a regime in which the patient is constantly receiving either an arsenical or a heavy metal during the first year of the disease or longer is the best and safest modern practice, both in the interest of the patient and of the public health. The continuous method secured the reversal of the blood Wassermann reaction by the end of the year in 81.8 per cent, whereas the intermittent scheme of treatment with rest intervals of a month or more secured only 37.3 per cent of reversals, and irregular treatment (patient's negligence) gave only 4.7 per cent of Wassermann reversal within a year.

The Wassermann findings are an unsafe guide to the time of cessation of treatment. Treat by schedule and not by the Wassermann test is the slogan of the best modern practice.

Two-thirds (sixty-four per cent) of those patients who received only one to four injections of an arsphenamine with heavy metal relapsed.

Neoarsphenamine, although slightly inferior to arsphenamine "606," is not an inefficient drug, and its greater adaptability and easier application make it, in suitable combination, the preferred drug for the physician engaged in general practice, upon whom is dependent the ultimate suppression of syphilis.

From the data presented it appears that the modern system for the treatment of early syphilis must be continuous; it must employ an arsphenamine and bismuth (intramuscularly); it must call for thirty injections of the arsphenamine with an equal number of the bismuth injections. As a scheme more in harmony with the trend toward longer courses, three series of from ten to twelve injections each of the arsenical drug may be given. To secure an overlapping of the heavy metal and the arsenical, begin the bismuth with the last arsenical in each course, continue it through the period in which the arsenical is suspended, and on to the beginning of the next arsenical course. The bismuth is then suspended until the arsenical course is completed. The treatment should preferably be ultimately ended with bismuth. The first course of bismuth should be short (six doses), increasing by two injections so that the last course of bismuth following the third course of ten to

twelve injections of arsenic should consist of ten doses.

Spinal fluid examinations should be made before discharge and frequent (three to four yearly) blood tests made for several years after the completion of the above routine.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.

By G. A. WILLIAMSON, JR., M.D.

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Spontaneous Rupture of the Bladder Associated with Stricture of the Urethra. J. A. Lazarus and Arthur A. Rosenthal, *J. Urology*, July, 1936.

These authors report a case of a man, age forty-eight, who had an urethral stricture causing recurring attacks of acute retention for twenty years. His stream slowed up, urination was difficult and painful. The symptoms of bladder perforation gradually developed with no history of trauma or apparent reason other than stricture.

Spontaneous rupture of the bladder implies a perforation resulting from an insignificant or negligible trauma. Rupture may be intra or extraperitoneal. In extraperitoneal perforations, urine escapes into the perivesicle and perirectal tissues, and may extend downward to the perineum, scrotum, and penis, and anterior abdominal wall. In intraperitoneal rupture urine escapes into the peritoneal cavity, and signs and symptoms of peritonitis result. Rupture of the posterior urethra produces the same clinical picture as an extraperitoneal perforation of the bladder.

The condition usually occurs when the bladder is distended, and is the seat of some pathological condition associated with some type of urinary obstruction. The rupture is probably due to a combination of forces such as contraction of the abdominal muscles with simultaneous contraction of the detrusor muscle in the presence of the above stated pathology.

The symptoms vary with the site of perforation, and the elapse of time. There is usually severe pain, shock, mild or severe, urethral bleeding or bloodstained urine, urgency, dysuria, and tenesmus and later evidence of urinary extravasation or peritonitis. If the patient is catheterized, and only a small amount of blood urine, or no urine at all obtained, a measured amount of sterile water may be injected through the catheter, and a less amount withdrawn. Intravenous urography may aid in the diagnosis if the patient's condition permits its use.

The treatment is surgical, with thorough drainage of the extravasated areas and bladder drainage.

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POLIOMYELITIS*

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POLIOMYELITIS, or, as it is commonly termed by the laity, infantile paralysis, is an infectious, communicable disease, occurring sporadically and in epidemics characterized by inflammatory changes in the nervous system and producing many baffling problems in the search for its etiologic agents and in its control.

Along with epidemic encephalitis, it has been classed as one of the "new" diseases, and this classification is probably correct despite the finding of an Egyptian skeleton dating back to 3700 B.C. with one leg shorter than the other and the picture of a priest from an Egyptian stele with a "withered" leg—both attributed to poliomyelitis by some, but due to the scarcity of such reports Ruhrah and many others think these various pictured defects were the result of tuberculosis or congenital deformities.

The question of whether poliomyelitis dates back to antiquity is of interest but probably of little scientific importance since no reference to the disease is found in the literature until the end of the eighteenth century, when Underwood in "Diseases of Children" mentions "the debility of the lower extremities" as a clinical entity. Thus, assuming that poliomyelitis existed in Egypt in 3700 B.C., five and a half thousand years passed with little or no mention of epidemics or of symptoms that relate to the disease.

It was not until 1906 with the publication of Wickman's studies and the recognition of the condition pathologically that any experimental work was done. In 1909 the infectivity of the disease was proved by transmission from one monkey to another. Only for the past twenty-five years have we had a general recognition and acceptance of the infectious nature of the disease. Thus it is more or less a "new" disease.

The following brief epidemiological facts are of interest: (These might better be called "the common factors" of several recent epidemics.)

Age.—The disease is essentially one of childhood. Approximately eighty per cent of adults are immune. Many reasons have been advanced as to why this is true. Most accepted is the belief that the great majority of adults have had the disease as children in a mild, nonparalytic form probably never suspected. Another theory is that exposure to these nonparalytic cases during childhood resulted in an immunity with no invasion of the virus into the central nervous system.

Sex.—Males are more susceptible than females in the proportion of sixty to forty per cent.

Race.—Judging by the statistics from four great epidemics in America, the negro is relatively immune. In the North Carolina-Virginia epidemic the number of negroes affected was negligible. In the New

*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1936.

York epidemic the rate was only two-fifths that of the whites.

Seasonal Occurrence.—Poliomyelitis is a disease of warm weather, subsiding with the onset of cold weather. Despite this often observed fact, no epidemic of importance has occurred in a warm climate with the exception of the recent epidemic in our adjoining states. All others have been in Northern and Northeastern States during summer months.

The incidence is very low when the population as a whole is taken, seldom exceeding one case per thousand of population.

The mortality has varied from three to twenty-two per cent—the latter figure from Austria; the average figure in the United States being always under ten per cent.

SYMPTOMATOLOGY AND DIAGNOSIS

The chart will be misleading if it is not remembered that any one of the stages may be missing entirely. This is particularly true of the first or systemic phase which may not appear—the disease starting abruptly with the central nervous system invasion. In other forms the paralysis may appear “out of a clear sky” as it were; this is frequently seen in the bulbar type. Again, only the first stage may be present, called abortive; first and second only, and called nonparalytic.

Diagnosis in sporadic cases of poliomyelitis (before the paralytic stage) is extremely difficult, sometimes probably impossible, because of the similarity of symptoms to various other diseases; in epidemics the clinical picture in the second or preparalytic stage is often sufficiently characteristic to admit of a diagnosis.

For convenience the disease may be divided into four stages.

1. The stage of general infection (may or may not be abortive).
2. The preparalytic (nonparalytic).
3. Paralytic.
4. Residual paralysis, convalescence or death.

The symptoms appearing during the first stage are (in order of frequency):

1. Fever.
2. Vomiting.

3. Headache.
4. Diarrhea or constipation.
5. Sore throat.
6. Slight drowsiness.
7. Coryza.
8. Cough.

The symptoms of the preparalytic (or nonparalytic) stage are:

1. Stiffness of neck.
2. Rigidity of spine.
3. Tremor or twitching.
4. Hyperesthesia.
5. Muscle tenderness.
6. Slightly positive Kernig or Brudzinski contralateral leg sign.

The paralysis makes up the third stage and may be flaccid or spastic but usually the former. The degree of deformity is greater at this time than later, and regardless of the degree some subsequent improvement will be noted. This change is the fourth stage and is called the residual or remission paralysis by Landon and Smith.

At this time it might be well to emphasize certain observations made principally by Aycock and McKhann:

1. The degree of prostration, the degree of temperature, and the number or type of cells in the spinal fluid are no indication of paralysis or of the degree of paralysis.
2. Tremor is an indication of paralysis and shows up a few hours before the third stage of the disease.

It will be noticed that the symptoms of the first stage are those of almost any acute generalized infection. Because these symptoms are so indefinite, the diagnosis is entirely presumptive. When the virus enters the central nervous system, there are definite objective physical findings which point to the diagnosis of poliomyelitis in the great majority of cases. It is generally agreed that the clinical picture of this second stage is sufficiently characteristic to admit of a diagnosis. At this time there is evidence of meningeal irritation and an increased cell count. The presence of a stiff neck and spine, the characteristic “polio” attitude of the patient, tremor, apprehension, pain in the extremities or joints, especially in neck and back, associated with a

febrile stage of variable duration, headache, and a history of gastrointestinal or upper respiratory disturbance should arouse suspicion concerning the nature of the disease. An increased cell count (from 15 to 500) with a preponderance of mononuclears will complete the picture and confirm the diagnosis.

DIFFERENTIAL DIAGNOSIS

Certain types of poliomyelitis may simulate certain other diseases, especially in the early stages.

Tuberculous meningitis is very similar. The onset is more sudden in polio and there is less stupor. Vomiting comes in the early stage and is not projectile as in tuberculous meningitis. Early loss of reflexes and all signs of meningeal irritation occur earlier in polio and are more constant. Laboratory findings are practically identical except for the finding of the tubercle bacillus. Upon this, the history and the characteristic tremors and palsies of poliomyelitis, the final differential diagnosis must depend.

Meningococcic meningitis is often confused with poliomyelitis. This form of meningitis usually occurs in winter or spring—poliomyelitis during the summer months. The spinal fluid is usually clear in polio and turbid or cloudy in this type of meningitis. The cell counts run into the thousands and the intracellular gram-negative diplococcus is usually present. Vomiting in meningococcic meningitis is nearly always projectile, and the degree of prostration and delirium is greater than in polio. The psychic disturbances are more pronounced. Blackfan and McKhann emphasize the fact that the child with meningococcic meningitis is obviously much sicker, more stuporous, more "knocked out" than one with poliomyelitis.

Other forms of meningitis caused by the pneumococcus, streptococcus, influenza bacillus, colon bacillus, and staphylococcus must be diagnosed by the identification of the specific organism bacteriologically. Meningeal involvement is usually more marked than in poliomyelitis.

Meningismus, often seen in the early stages of scarlet fever, measles, pertussis, gastroenteritis, and pneumonia, must be

differentiated from polio. The determination of the primary cause of the meningism is the essential differential point since the clinical symptoms and laboratory findings are very similar.

Diphtheritic paralysis or any peripheral paralysis and poliomyelitis may be confused. However, the spinal fluid changes are absent in polyneuritis, and the history of a recent attack of diphtheria or the symptoms of lead, arsenic, or mercury poisoning would help clear up the picture. Then, too, the paralysis comes on very gradually, and there is an absence of the immediately preceding febrile stage in multiple neuritis.

The pseudoparalysis of rickets, scurvy, and congenital lues may simulate the true paralysis of poliomyelitis. In these cases history, clinical and X-ray evidence, blood tests, and symptoms of vitamin deficiency will be of assistance.

PROPHYLAXIS AND THERAPY

All experimental work during the past fifteen years has been based on the assumption that the disease is due to a filterable virus, that this virus is found in the nasopharyngeal secretions, that the virus enters the central nervous system. The consensus of opinion during the past few years is that this entrance to the central nervous system is by the nerve root path; most frequently by the olfactory nerve.

Since this invasion of the central nervous system occurs in less than twenty-five per cent of the preparalytic cases (paralysis occurs in less than twenty-five per cent of preparalytic cases), the use of various therapeutic agents can only be evaluated in enormous series of cases. This is also true of all prophylactic treatments.

In the 1935 epidemic the prophylactic vaccines of Kolmer and Brodie were given to several thousand children. The results proved little because the sample of population taken, including controls, was too small to be of any significance. This is emphasized by the fact that the vast majority of children vaccinated would not have contracted polio even though they had not received the vaccine. Proof that the vaccine

was responsible for several cases of paralysis and death was deemed sufficient by the United States Public Health Service to publish a News Letter, January 2, 1936. This letter stated that twelve cases of poliomyelitis (with paralysis) had developed in children receiving either Vaccine A or Vaccine B following the first or second dose. Six of these children died. Paralytic poliomyelitis was not epidemic in any of the localities at the time of the occurrence of these cases, if these cases themselves are not included in the count.

As part of the discussion of a paper by Dr. Kolmer when some of these cases were mentioned Dr. James P. Leake said, "In each instance in which the site of the first injection and the site of the first paralysis are known, the latter occurred either in the limb injected or in the corresponding limb of the opposite side; in other words, the cells of the spinal cord first involved were at the same level as the injection."

Considering the series as a whole with careful study of each case history, the evidence would seem sufficient to justify the discontinuance of the human use of this vaccine.

From the standpoint of prophylaxis there seems at present to be no safe and effectual vaccine for this virus disease.

TREATMENT

Once the disease is established and nerve cell destruction has taken place, therapy at its best must remain palliative and corrective.

Quoting from Dr. Thos. M. Rivers, "Viruses seem to multiply inside of cells, and it has been repeatedly shown that, once the viruses have come in contact with susceptible cells or have entered them, the protective or neutralizing properties of convalescent or immune serum have no power of preventing injury or death of the parasitized cells. Furthermore, it has been shown that cells may be infected several days before any evidence of such infection is obvious. Usually, by the time an infected host begins to show signs and symptoms of a virus illness, all the cells that are going to be involved during that attack have already

been entered by the infecting agent. Consequently, in virus maladies serum therapy given after the onset of signs and symptoms of illness is of little or no value. There is ample experimental and clinical evidence that such is the case."

In other words the use of convalescent human blood serum, immune serum from sheep, goats, and monkeys, nonspecific sera (such as normal horse serum) as well as autotherapy, given intraspinaly, intravenously, subcutaneously, and intramuscularly, has been without apparent value or justification.

SUMMARY

1. Poliomyelitis is an infectious disease caused by a filterable virus and practically unknown before the nineteenth century.
2. Certain epidemiological factors of this disease follow a fairly consistent course.
3. Many symptoms and stages of the disease may be absent—paralysis itself developing in less than twenty-five per cent of cases.
4. Differential diagnosis in sporadic cases is probably as difficult as in any clinical entity known to medicine.
5. There is no specific laboratory test.
6. Vaccines for prophylaxis are either ineffectual or dangerous. Those that are safe have *not been proved* to immunize.
7. Treatment of the disease in the paralytic stage by serum is apparently without justification.
8. Orthopedic care from the time of diagnosis is desirable.

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DISCUSSION

DR. EUGENE ROSAMOND (Memphis): Mr. President and Gentlemen: I want to thank Dr. Poole for this splendid paper. Dr. Poole has presented to us a clear, concise, and understandable

summary of what the ultrascientific investigators and authorities think today about poliomyelitis. We hope, however, that what he brings to us is modern thought rather than modern knowledge, for the absolute hopelessness of it is appalling. Diagnosis impossible, cure impossible, nerve cells invaded and irreparably damaged even before the onset of acute illness; the virus killing power of immune and normal blood, antitoxin from both man and beast found worthless—nothing left to offer frantic friends and patients but opium and rest in bed.

Certainly, as Dr. Poole tells us, there is no scientific proof as to the efficacy of convalescent serum. On the other hand, it is the only harmless thing known that possesses virucidal power, and clinically it seems to do good. Since its widespread use something has reduced the mortality rate.

Certainly all of the infection is not shut up in the nerve cells. Some of it may still be free in the body fluids. Remember, this virus is too small to be studied with the microscope. Maybe it does not always obey rules and regulations.

Malaria develops within a cell. There are no organisms free in the body fluids. All are protected by the red blood cell capsule. But when quinine renders the red blood cell permeable, the normal blood plasma kills the parasite. Maybe nerve cells can be invaded by a cure as well as by a cause. Who knows? This may not be scientific argument, but anything is fair justification for doing something at the bedside. Authorities are not infallible. There is too much difference of opinion, too much ultrascientific discord and squabble for me to abandon so logical a procedure. It at least helps my feelings and the family's feelings.

Of course, the impressions of the bedside clinician have little value. The trend of medical thought is shaped by the laboratories. But in spite of authority, I still believe I can diagnose poliomyelitis in the preparalytic stage.

It is a clinical entity, and almost by inspection alone should one's suspicions be aroused. The spinal sign and the spinal fluid findings are sufficient evidence for a diagnosis.

There is a mistaken and widespread and prevalent idea among the medical profession, that I have heard voiced many times, that the preparalytic stage of poliomyelitis is so vague and so mild and so symptomless that it is never recognizable.

Somnolence, hyperesthesia, tremor, undue irritability, headache, disproportionate pulse and temperature, stiff neck, painful spine, and Kernig's and Brudzinski's signs are not vague symptoms.

If we add to the routine examination of all patients and adhere to it with the same unflinching regularity that we look at the throat and ears, the simple expedient of bending a baby double by

feet and head, or asking the older child to sit up and bend forward in bed, we will be able to add poliomyelitis, in a majority of the times we need to know it, to the list of things we know.

DR. E. J. LIPSCOMB (Memphis): Being an orthopedic man, naturally I do not treat acute stages of poliomyelitis, but there are some vital points in the treatment of the acute stage that I think are very necessary to keep in mind. There are certain groups of muscles paralyzed, and those muscles have a far better chance to recover if the strain is kept off of them during the regenerative as well as the paralytic stage. In the cases where the leg muscles are affected it is very important to keep the legs and feet supported with right angle night splints. In a case of a paralysis in the upper extremity it is very important to support the arm, forearm, and the shoulder with some type of right angle abduction splint. We know that in the upper extremity the most common muscles to be affected are the deltoid, biceps, and the supinators, and in this case the arm should be kept abducted to the forearm at right angle to the arm with the forearm in supination. In cases where the spinal muscles are affected it is very important to keep these children lying prone in bed eight to twelve months during the regenerative stage, not even allowing them to sit up because we realize that paralyzed muscles come back faster and make a more complete recovery if all strain is kept off them. I think these points might well be kept in mind by the nurse and doctor looking after an acute poliomyelitis.

DR. W. L. POOLE (closing): I do not think I have anything more to say except to thank the gentlemen for discussing my paper, and to add one point. The staff conferences at a number of hospitals in the United States have at different times been turned into debating societies regarding the diagnosis of poliomyelitis in the preparalytic stage, with a different verdict from every hospital. Certainly there are some types of poliomyelitis that can be diagnosed in the preparalytic stage, but there are more which cannot. The symptoms in many cases, in fact most of those that Dr. Rosamond mentioned, are the same that he would have given if we had been talking about certain forms of meningitis or encephalitis.

The fact that we are justified in giving convalescent serum on account of the feelings of the family and for the personal satisfaction of at least "doing something" does not change the fact that the patient has little to expect from the serum per se.

Orthopedic care, I think, is of most importance, particularly when paralysis develops.

OCULAR TUBERCULOSIS*

E. C. ELLETT, M.D., Memphis

TUBERCULOSIS of the eye presents diagnostic problems, as well as therapeutic problems, of such great interest to both oculist and internist that it has seemed to be a suitable subject to present to this audience for discussion, especially since it has not been my experience to get full and satisfactory cooperation from the internist or general practitioner in either the diagnosis or treatment of patients so affected.

In considering ocular tuberculosis it is thought best not to speak at this time of those forms affecting the skin of the lids, such as lupus, nor tuberculosis of the conjunctiva, but to consider those cases in which the ocular infection is from within, i.e., endogenous, and usually hematogenous, and not conditions in which there is at least a probability that the infection is air-borne, or exogenous. We speak, of course, of the infection of the eye, because we know that practically all tuberculous infection enters the body either by aspiration of infected air or the ingestion of infected milk.

The frequency of ocular tuberculosis is difficult to estimate with accuracy, but it is not at all uncommon. O'Brien (*The Eye, Ear, Nose, and Throat Monthly*, January, 1936, XIV, 12) says that it is estimated that perhaps one-half of all cases of chronic uveitis are due to tuberculosis, and that it should be suspected in any low-grade chronic uveitis in which the onset has been insidious and which is characterized by little or no pain, few signs of congestion, a tendency to relapse, a destructive nature and intractability to treatment. I would eliminate the last two features, as most of my cases are neither of a destructive nature nor intractable. For a number of years there has never been a time when we have not had several cases of ocular tuberculosis under treatment.

To quote from another source that can be

considered authoritative, the late Dr. W. C. Finnoff (*Proceedings of the Association for Research in Ophthalmology*, Philadelphia, 1931): "We now know that tuberculosis plays an important part in the production of uveal diseases. Its frequency in human cases is difficult to estimate. In central Europe the percentage of cases of chronic uveitis that are classified as tuberculous greatly exceeds the number so diagnosed in this or other countries. The only possible way to make an exact diagnosis is by microscopic examination of enucleated eyes. This, however, is done only in a relatively small number of cases. In the majority the determination of a tuberculous etiology is based on the following conditions: clinical appearance of the diseased eye, course of the inflammation, diagnostic reaction to tuberculin, influence of tuberculin on the ocular lesion, influence of therapeutic agents, effect of local treatment, the result of hygienic measures, the history of exposure to tuberculous infection, and the demonstration of active or latent foci in the body, either by physical examination or by means of X-ray. The locating of the latent foci or the finding of active clinical signs of tuberculosis is not always possible, and the apparent absence of either, while adding evidence against, should not entirely exclude the possibility of tuberculosis as an etiological factor."

Ocular tuberculosis is a disease of young people, that is, under thirty-five and usually under thirty, and it almost invariably occurs in apparently robust persons with no general symptoms. The forms of which we wish to speak are those affecting the cornea, sclera, and uveal tract.

We strongly suspect that a certain type of deep-seated corneal inflammation is tuberculous, although we must be careful to exclude congenital lues as a cause. The well-known interstitial keratitis of congenital lues has several features which should lead to its recognition. The family

*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1936.

history, the serological tests of both patient and parents, the involvement of both eyes, usually not at the same time, and the association of Hutchinson's teeth and other signs help in the diagnosis. Tuberculous keratitis is not so severe, more chronic, and so prone to recur, while other signs of congenital lues are lacking. Tuberculous keratitis sometimes seems to represent the invasion of the cornea from an inflammation of the sclera—a sclerokeratitis or sclerosing keratitis. Various forms of inflammation of the sclera and episcleral tissue are sometimes thought to be tuberculous. This condition, as indeed all the inflammatory lesions of which we are speaking, may be due to focal infections. In America they are frequently so regarded, while the same conditions in other countries, Germany especially, would be more apt to be considered tuberculous.

By far the commonest form of ocular tuberculosis is that of the uveal tract, i.e., the iris, ciliary body, and choroid. It is not intended to speak now of tuberculosis of the retinal vessels and the recurrent vitreous hemorrhages that follow it. In the description of the uveal disease it will only be attempted to be sufficiently explicit to indicate the conditions that I have in mind.

Tuberculous iritis may be of two forms. In one we have a simple iritis with tendency to recurrence and with so little inflammatory action that the presence of adhesions is often the first indication of trouble. The other form is characterized by the presence of tubercles, which vary in size, location, and number, so that they are not reliable diagnostic signs. There is a tendency, however, for tuberculous nodules to develop near the root of the iris, while gummata are often seen at or near the edge of the pupil.

Inflammation of the ciliary body always accompanies to some degree an iritis. Unless there is localized pathology, like a tubercle, it is hardly to be separated clinically from iritis.

When the choroid is involved we find several manifestations. Deposits on the posterior surface of the cornea, so-called keratic precipitates or K.P., are common

and significant and are thought to be deposits thrown from the aqueous against the cornea by centrifugal force. They are usually larger in tuberculous than in other forms of uveitis, as will be illustrated. Vitreous opacities are usual, sometimes very dense, and with a corresponding effect on vision. We think a weblike opacity with many dots, to which we have applied the name "dotted-veil type," is highly significant of tuberculosis. The other sign is the actual presence of a characteristic inflammatory lesion in the eye ground, which can be seen with the ophthalmoscope. Sometimes the vitreous is too cloudy to permit a view of these lesions, but when seen they are fluffy white areas, not to be seen clearly with any lens, and fading off to normal tissue. They are likened to balls of fluffy cotton or wool, and are thought to be tubercles. Primarily in the choroid, they involve the retina to such a degree that the retinal vessels are obscured by the accompanying edema and exudate, but the vessels are not involved, and when the lesion heals, a rounded pigmented area remains, crossed by normal retinal vessels. Unless the lesion is central, i.e., at the macula, the eye usually heals with good vision.

The outstanding characteristic of these lesions is their slow progress and tendency to recurrence. So often we see in such a case not only a fresh lesion, but unmistakable scars of previous ones, long healed. When such a case presents itself for study, the ophthalmologist's point of view is that if focal infection and lues can be eliminated, tuberculosis is the most probable cause. The internist's view is that such localized tuberculous lesions are most likely secondary, and the usual methods of investigation should show the primary lesion, but do not. The great majority of such cases are secondary, and in clinics trained in the study of tuberculosis (Werdenberg, of Davos) the primary focus was located in seventy-eight out of 110 eyes. The most frequent focus is intrathoracic, not an acute or severe or well-marked disease of the lung proper, but a chronic or slumbering tuberculosis, located mainly in the hilum and paratracheal lymph glands, from which the

bacilli are disseminated through the blood. Finnoff says that "it is now generally conceded that with rare exceptions all types of tuberculosis of the uveal tract and other parts of the eye are secondarily infected from a focus in some remote part of the body." Sometimes the tonsils may harbor the focus, and in one case of recurrent tuberculous keratitis it seemed positive that it was in the pelvic organs. Very few cases of ocular tuberculosis are seen in patients with marked pulmonary tuberculosis, but this may be explained by the view that pulmonary tuberculosis is usually an exogenous infection in people who are not periodically immunized from an old glandular focus. (Meisner, Zeit. f. Augenheilk., May, 1931, V., 74). The tuberculosis is of the nonclinical variety, and no symptoms exist except those in the eye. Moreover, the infection of the eye occurs mainly in the second phase of the general disease, that of dissemination and increased sensitivity, when the bacilli get into the blood stream and we have a metastasis of a bacillemia. The ocular lesion is protected from secondary infection, which is not the rule in pulmonary tuberculosis, and the two lesions therefore do not act alike. There is no secretion, such as sputum, to examine for bacilli, a biopsy is not possible, and the specific focal reaction from an injection of tuberculin, while excellent evidence of the tubercular nature of the local process, is sufficiently dangerous when provoked in the eye to make one hesitate to produce it.

In referring to the stages of tuberculosis we have in mind Ranke's division into three stages, which has a clinical usefulness, although not generally adopted. Ranke (Beit, Z Klin d Tuberk, 1911-21) proposed the following division:

- (1) The initial localization of the infection, which, with the corresponding lymphatic gland, constitutes the "primary complex."

- (2) A secondary stage of generalization, with the development of hypersensitiveness and often the formation of hematogenous metastasis.

- (3) A tertiary stage with relatively high immunity and isolated organ tuberculosis.

Living bacilli may persist in lesions for years and decades despite calcification and fibrous encapsulation, and may at times be discharged into the blood stream either from the pulmonary lesion or a lymph node. This hematogenous dissemination is at the basis of Ranke's secondary stage, generalization of the infection.

Without attempting a description of the different forms of ocular tuberculosis, we may say that the clinical forms are varied, granular, miliary, granulomatous, sclerosing, necrotic, serous, or seroplastic. A diagnosis is made by an inquiry that neglects no system, and is usually, as stated before, a limited choice between focal infection, syphilis, and tuberculosis. The diagnosis is usually one of probability only, since specific clinical signs do not exist.

Another condition from which intraocular tuberculosis must be differentiated is tumor. The characteristics of each are usually sufficiently marked to make the distinction easy.

To state in as few words as possible my own conception of some of the facts about tuberculosis and its ocular manifestations, it seems that infection with the tubercle bacillus causes a defensive reaction in the body, which is immunity. The tissues themselves become sensitive, which is allergy, and when more tuberculo-protein, such as tuberculin, is introduced, a reaction occurs, which is an allergic reaction. Tubercles form, e.g., in the iris, before there is any considerable allergy. Exudative inflammation, without tubercles, is allergic. It is probable therefore that many of the things we call ocular tuberculosis are allergic manifestations and not specific.

Besides the clinical signs, the various preparations grouped together as tuberculin are used in diagnosis as well as in treatment. There are about one hundred different forms of tuberculin, and I am not even familiar with the names of all of them. The best known and most used are: (1) Koch's Old Tuberculin (O. T.), a product obtained by boiling for one hour tubercle bacilli grown on glycerin bouillon, filtering, and evaporating to one-tenth the original volume. It is therefore a glycerin bouillon

extract of tubercle bacilli; (2) Koch's Bacillus Emulsion (B. E.), which is a glycerin and water suspension of dried pulverized bacilli; (3) Deny's Bouillon Filtrate (B. F.), which is similar to old tuberculin that has not been heated or concentrated; (4) Von Ruck's Vaccine, made up of several extracts of tubercle bacilli grown on glycerin broth and killed with phenol; (5) Seibert's Purified Protein Derivative of Tuberculin; (6) Toeniessen's Tebeprotein, a comparatively pure product obtained by chemical extraction of tubercle bacilli; and (7) the A. O. of Arima. Of these, my own experience has been practically limited to O. T. and B. E.

Many diagnostic methods have been devised, but probably the safest, most accurate, and best is the intradermal injection of Mantoux. 1/50000 milligram of the Purified Protein Derivative of Seibert or other tuberculin is injected into the skin on the flexor surface of the forearm. If there is no reaction within forty-eight hours a second injection of 1/200 milligram is made. If no reaction occurs, the test is negative.

In regard to treatment, we have the general or nonspecific treatment, consisting of open air, rest, exercise, diet, and physiotherapy, and the specific treatment, tuberculin. We think tuberculin is helpful in such cases, while the internist is skeptical or frankly hostile to it, basing his opinion on the results in pulmonary tuberculosis.

To delve a little into this matter of tuberculin, its advocates, and I am one of them, think that only cases without fever, pursuing a slow course, showing no tendency to progress, but manifesting a strong tendency to fibrosis, are suitable for this treatment, and it follows that tuberculin is a remedy for those forms of tuberculosis which are spontaneously curable. It is admitted that "tuberculin is not a specific remedy for tuberculosis, as is antitoxin for diphtheria and tetanus. The antibodies it produces do not neutralize *in vitro*. Tuberculin does not produce immunity, unlike other specific remedies, and it is powerless against the purest form of the disease, miliary tuberculosis." (E. V. L.

Brown). It is certainly not the remedy *par excellence* of the tuberculosis specialist. "Uveal tuberculosis is mainly a manifestation of the second phase of tuberculosis, in which there is marked hypersensitiveness, active immunity, and marked tendency to spontaneous cicatrization of both lung and eye lesions. It is the exudative manifestation which endangers the organ, and tuberculin probably should not be used in this stage of ocular tuberculosis nor in generalized miliary tuberculosis. No cures by tuberculin are to be expected in the third stage of massive organ destruction. Its use is properly confined, as it is for tuberculosis in general, to the secondary, or fibrosing early third stages, in which spontaneous healings are very frequent." (E. V. L. Brown.) Used in this stage, the eye men think they find it helpful, and for myself I can say I have certainly never seen it to harm. The psychic effect is not to be overlooked, and it may act to some extent as any foreign protein, though we avoid a reaction from it. There is nothing spectacular about it, and one dose accomplishes nothing unless it is too large and causes a focal reaction, which may help or may do harm. "For forty years eye specialists have continued to rely on tuberculin, an agent largely discredited by the general tuberculosis specialist, and never used by him to the exclusion of open air, rest, and diet. On the other hand, eye specialists have largely ignored what the tuberculosis specialist has done with open air, rest, and diet. The eye specialist has been too content simply to see the eye tuberculosis get well and has not given due consideration to the matter of recurrences, which means that the source of the infection is still active." (E. V. L. Brown.)

Probably no one considers tuberculin absolutely essential in the treatment. Cases get well without any treatment, others on general tonic treatment with rest, others do well on potassium iodide and bichloride. But I am fully convinced that all cases do better with proper tuberculin treatment, unless complicated by an active tubercular lesion elsewhere that may contraindicate tuberculin. In many cases I have seen other

measures fail to bring relief, and complete and permanent healing follow the use of tuberculin.

We will not go into the preparation or method of administration, except to say that its use is still somewhat empirical, that the dose must be very small and gradually increased, and stopped if a reaction appears. It must be continued for months, probably for a year. As stated, my own experience is almost limited to O. T. and B. E. We begin with 1/1000 milligram given three times a week and increase it till one milligram is being given. This is continued once a week for a year, unless a general reaction occurs at any stage of the treatment. Under those circumstances the tuberculin is stopped and in a few days begun in smaller doses than that causing the reaction, and again gradually increased. Larger doses, even 100 milligrams (Wilmer), are sometimes given.

More recent are such plans as that proposed by Schieck of Wuerburg of the treatment of tubercular iridocyclitis by the introduction of the patient's own blood into the anterior chamber after withdrawal of the aqueous. It is spoken of as prospectively helpful. Chemotherapy, by gold preparations, has had some mention, and more evidence has been given in favor of the X-ray (Scheerer, thirty-six cases), radium (Kumer and Sallman, thirty cases), and ultraviolet rays (Duke-Elder, twelve cases). The healing powers of nature and the unfavorable soil which the eye affords for the growth of the bacillus combine to help us to fairly good average results. In this connection the famous passage in Osler's "Practice of Medicine" wherein he draws a parallel between tuberculous infection and the "Parable of the Sower" becomes a very interesting contribution to the subject.

The local and nonspecific general treatment of these conditions is very important. The inflammatory manifestations call for atropin and hot applications, with such other local measures as have proven helpful. Foreign protein, of which there are many preparations, rest, the elimination of foci of infection wherever found, are used as experience dictates. But the main purpose of

this paper is to remind you of the occurrence of ocular tuberculosis in people who are not apparently tuberculous, and to call attention to some of its characteristics, as well as its clinical course and termination.

DISCUSSION

DR. ROBERT WARNER (Nashville): It has long been recognized that as a general rule patients with proven tuberculosis in tuberculosis sanatoria show comparatively few tuberculous eye lesions. Likewise, ocular tuberculosis is not usually found associated with pulmonary tuberculosis, but is more generally associated with such lesions as tracheo-bronchial tuberculosis, tuberculous adenitis, tuberculosis of the bone, etc. Goldenburg and Fabricant found in 1073 cases of proven tuberculosis that less than one per cent showed evidence of tuberculosis of the uveal tract, and only about two per cent showed any evidence of fundus disease. They believed that tuberculosis of the eye is not so common as usually supposed and, when it occurs, is due to the embolic localization in the eye of tubercle bacilli from the blood stream. Crowe, of the Davidson County Tuberculosis Hospital, reports, "We have long been interested in 'ocular tuberculosis' because of the noticeable infrequency of such cases seen here, except in miliary tuberculosis and in the last few weeks of life in those cases of sudden widespread fulminating tuberculosis. Excluding those terminal cases, we have had five cases of extraocular tuberculosis and two cases of intraocular tuberculosis in the past ten years, or for three thousand six hundred and thirty-four admissions."

There are two views concerning the therapeutic action of tuberculin:

1. The use of tuberculin injections in the treatment of focal tuberculosis lesions rests upon the fact that the production of extremely mild inflammatory reactions about the tuberculous focus appears to stimulate the resistances of the body and to facilitate healing.
2. Tuberculin therapy results in abolishing an allergic hypersensitivity, for allergic individuals may be so treated that they are ultimately able to tolerate enormous doses without inflammation, necrosis, or constitutional symptoms.

Tuberculin treatment in its modern application is the work of Von Hippel. It consists in a form of active immunization, a stimulation of the body's natural protective resources, and depends, generally speaking, on the use of infinitesimal doses and the avoidance of the slightest local or general reaction. The injection should be given at definite intervals and continued over a long length of time.

Fishburg says that tuberculin injections produce a mild transient leukocytosis.

While there is some disagreement as to the value of tuberculin therapy, the predominance of opinion strongly indicates that tuberculin is a

therapeutic weapon of the highest value in ocular tuberculosis.

For many years I have been using Mulford's Old Tuberculin in the treatment of uveitis of unknown origin. In the majority of cases the treatment is given without the use of the diagnostic test, and I believe the results obtained are due to the leukocytic as well as the allergic properties rather than being specific for tuberculosis.

Last year at the meeting of the Tennessee Academy of Ophthalmology and Otolaryngology I reported fourteen cases that were cured or improved by the use of tuberculin. They were classified as follows: four cases of episcleritis, one case of sclerosing keratitis, two cases of uveitis, six

cases of posterior ocular tuberculosis, and one case of keratitis. Phlyctenular keratitis was not included in this series, as typical tubercular bacilli have never been demonstrated in phlyctenules, and the histologic picture of the phlyctenules is not the classical picture of a tubercle. Although the instillation of tuberculin into the conjunctival sacs of patients hypersensitive to tuberculin may cause the appearance of phlyctenules, the instillation of horse serum into the conjunctival sac of patients hypersensitive to horse serum will cause the same appearance. The evidence in favor of phlyctenules being due to vitamin deficiency and an allergic reaction of the sensitized epithelium surface of the cornea and the conjunctiva appears to be conclusive.

AN EVALUATION OF RADIATION IN CERTAIN DISEASES OF THE FEMALE PELVIS*

W. D. ANDERSON, M.D., AND W. S. LAWRENCE, M.D., Memphis

THE USE of radiation therapy in diseases and disorders of the female pelvis dates back to within a very few years of the discovery of the X-ray by Professor Roentgen. Both fibromyomas of the uterus and carcinoma of the cervix were treated by this means in 1902. It was in the treatment of cervical cancer that the crossfire method of applying the rays was first used. Since that time irradiation therapy has been tried in practically all of the gynecological diseases. In several of them it has been found to be of little value. However, a large number of disorders have been found to react so favorably to roentgen therapy that this type of treatment is universally employed for them today. These are the diseases with which we are concerned in this discussion.

Cancer of the Cervix.—Irradiation in this condition is now the accepted method in all of the larger cancer centers. Statistical reports gathered from a number of workers in this field give from fifty to fifty-seven per cent five-year cures in the early, or types I and II, cases, and from fifteen to twenty per cent in the late, or types III and IV, cases with a general average of from twenty-five to thirty-three per cent in all types. There is a slightly noticeable increase in the five-year cures in the latest reports. The tendency is toward a combination of radium and X-ray therapy in all cases, with surgery as a supplement in certain complications. This slight increase in cures is believed to be due to the increasing dosage of both radium and X-ray now being used. By giving smaller daily doses and prolonging the period under treatment up to two or three weeks, greater amounts of X-ray can be given to the skin without causing severe reactions, thereby increasing greatly the dose in the tumor itself. Radium dosage has been gradually stepped up from around 2,500 milligram-hours to 5,000 to

8,000 milligram-hours spread over five to seven days. By lengthening the time of treatment in this manner, trophic disturbances such as vesicovaginal and rectovaginal fistulae have been reduced. A detailed description of the various methods of radium and roentgen ray application in use is not within the scope of this paper.

Fibromyomas of the Uterus.—The roentgen ray offers a valuable and effective method of therapy in this condition in selected cases. Just what the mode of action is has not been conclusively demonstrated. It is believed by some that the inhibition of growth of the tumor and complete involution in many cases is due to the cessation of the menstrual function and consequent absence of the periodic congestion. On the other hand, Pfahler and McGlinn claim that they were able to deliver roentgen rays to a fibroid about the size of an orange located on the posterior wall of the uterus in the hollow of the sacrum, at the same time protecting the ovaries. This fibroid disappeared completely, menstrual function was never altered, and the patient became pregnant in a few months. It is probable, however, that in the majority of cases the results are obtained by the combined effect of the artificial menopause and the direct effect of the rays on the tumor itself.

Certain flexible limitations are to be considered in the selection of cases for radiation therapy. It is best suited for those women thirty-five years of age or over, in or near the menopause, in whom the tumor is no larger than halfway to the umbilicus. Also in patients suffering from constitutional disease such as marked heart disease, diabetes, nephritis, and tuberculosis in whom surgical procedures are contraindicated. Large-size tumors should be treated by irradiation also in those who have severe anemia, and in patients who refuse operation.

The following contraindications for radiation should be considered: (1) Women

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under thirty-five in whom it is desirable to preserve the childbearing function. (2) The presence of acute inflammatory disease in the pelvis. Chronic inflammatory disease is not a contraindication, but on the contrary reacts favorably to treatment. (3) Gangrenous and cystic degeneration of the tumor if this can be diagnosed. (4) Large pedunculated fibroids and those producing pressure symptoms are best treated surgically if the patient can stand it.

There is no evidence to substantiate the claim that malignant changes frequently follow radiation therapy of fibromyomas. On the other hand, there is sufficient evidence to show that the incidence of malignancy after radiation is less than the average for all gynecological cases—0.3 to 0.4 per cent in irradiated cases according to Werner of Vienna and Vogt of Tübingen as compared to five per cent in all gynecological cases. Kelly and Cullen report a general incidence of three per cent malignancy in fibromyoma. From this we feel justified in concluding that radiation offers a certain amount of protection against future malignancy.

This subject has received a great deal of attention from writers all over the world. Williams states that over 50,000 cases of fibroids so treated have been reported with an average cure around ninety per cent. In his series of 160 cases, eighty-eight per cent were classed as cured, and ninety-five per cent as satisfactory results. Pfahler and Vastine obtained satisfactory results in eighty-eight per cent and reviewed 15,000 cases in the literature with curative value in about ninety-five per cent.

In reviewing the records of thirty-three cases treated in private practice from 1930 to 1935 we have found ninety per cent satisfactory results.

Excessive Hemorrhage Near the Menopause.—Eleven years ago, in the Journal of the Canadian Medical Association for April, 1925, G. E. Richards, chief of the Department of Radiology, Toronto General Hospital, reported a series of 148 cases treated by X-rays without a single failure. We have recently reviewed the records and results in fifty cases in private practice treated between 1930 and 1935 and find the

same percentage of satisfactory results. And yet there are those who advise against this procedure, or at least recommend it in a halfhearted way. The fact cannot be too strongly stated that there is probably no therapeutic procedure which is so certain in its effects and so satisfactory in the vast majority of cases as the use of radiation in this type of disturbed menstrual function.

Of course no diagnostic stone should be left unturned in the management of these cases. But once the correct diagnosis is established, the treatment is comparatively simple, not distressing or even unpleasant to the patient, and the results as mentioned above are 100 per cent satisfactory.

These results may be obtained by either X-rays or radium rays. In our judgment, however, the X-ray method is by far the method of choice—and this for the following reasons: The total amount of radiation required to produce a lasting amenorrhea can be divided into daily or triweekly doses of such size that no nausea or other distressing symptoms will be produced, no hospitalization is required, no anesthetic with its element of danger, no remote possibility of injury to bladder or rectum, and no danger of lighting up old pelvic disease.

Amenorrhea and Scanty Menstruation.—Due to the untiring efforts and cooperation of the endocrinologists and gynecologists, a great deal of light has been shed on this hitherto refractory condition in the past fifteen years. The assimilation and practical application of all of this data, however, have been evident more so only in the latter half of the past decade. It is only through a thorough understanding of the physiology of normal menstruation that the effect of radiation on the disordered function can be appreciated. For this reason a brief review of the salient facts is in order.

The entire process of menstruation, according to the present concept, is inseparably connected with the glands of internal secretion. The female sex hormones, of which there are two, are directly responsible for the cyclic changes which take place. Let us consider first the internal secretion derived from the mature Graafian follicle, oestrin, or as it is commercially known, theelin. This hormone is a direct stimulant

to endometrial growth which prepares the wall of the uterus for the reception of the fertilized ovum. Back of this, however, is another hormone derived from the anterior lobe of the pituitary gland, the action of which is to stimulate the development of the primordial follicles to maturity. Without this substance there is no follicle growth, consequently no oestrin, and as a final result no menstruation. This hormone is known commercially as antuitrin-S or prolan.

Amenorrhea, per se, may be due to any one of several causes, such as ascending infection from cervical disease, adnexal disease, displacements of the uterus, ovarian disease, and endocrine disturbances. It is the latter condition with which we are concerned. The others are in the field of the gynecologist and have no place in this discussion.

Amenorrhea is of two types—primary, in which menstruation has never occurred, and secondary, in which there is an absence of menstruation for a period of three or more months not due to pregnancy or lactation. From the endocrine standpoint it is due to one of two causes: (1) ovarian hypofunction due to an insufficiency of oestrin, with a normal amount of anterior pituitary hormone, resulting in a hypoplastic and infantile type of uterus, incapable of menstruating, and (2) pituitary amenorrhea due to a lack of anterior pituitary hormone, with consequent underdevelopment of the Graafian follicle. Studies carried out by Mazer and Goldstein and many others show that the pituitary amenorrheas constitute about eighty per cent of the cases.

Both of these types are amenable to X-ray treatment, the pituitary type more so than the ovarian type. The latter form can frequently be controlled simply by the administration of Theelin. The rationale of therapy in this disorder is based on the fact that small doses to the pituitary and ovaries have a marked stimulating rather than destructive effect. That this fact is disputed by many eminent radiologists we admit, but it is our belief that sufficient evidence is present to substantiate the claim. The plan of treatment most successful is to deliver one small treatment of about eighty-five r

units each to the ovaries and pituitary a week for three weeks. Edeiken reports a return to normal in forty out of fifty-six amenorrheic patients by this plan.

Van De Velde was the first to use radiation for amenorrhea and scanty menstruation in 1915. Since then many have reported on this subject. Flatau cured twenty-five out of thirty-eight cases. Rubin was successful in eleven out of twelve cases. Drips and Ford had good results in six of nine cases.

Menorrhagia and Metrorrhagia in Girls and Young Women.—When these symptoms of endocrine imbalance occur in women at about the age of forty, they are, it is true, bad enough, still the outlook of the patient is not all gloom. She has been taught that such things may occur at "her time of life" and that even if nothing is done, she will, after a few extremely trying years, be all right. And so she drags along through one period of hemorrhage and prostration to another hoping that each will be the last. But when they occur at puberty or within the succeeding decade, they constitute a much more serious problem—a problem that involves the aspirations and longings, the despair and gloom, the sensitiveness and embarrassment, that only youth can experience. Some of these patients, watching the repeated failure of drugs and other treatments, and seeing the color gradually fade from their cheeks, become so despondent as to border on melancholia.

The proper management of such patients and their return to perfect health and normal menstruation is one of the outstanding achievements of X-ray therapy.

Determining the proper doses and the time of their administration is by no means a simple matter, but the desired result *can* be accomplished.

Our plan, in general, of treating these cases is to give either two or three mild stimulating doses to the pituitary, which gland seems to exert a governing or controlling influence over the other glands of the endocrine system, and, in divided doses, giving a total of from one-third to one-half of a castration dose to the ovaries. Such treatment will in almost every case accomplish a cessation of bleeding in from three

to five weeks and establish an amenorrhea which will continue from four to eight months. During this time the patient will gain rapidly in health, strength, and color.

Radium should have no place in the management of these cases.

Brief mention of a few cases may help to visualize results. (1) A girl of sixteen was compelled to stop school on account of metrorrhagia extremis. Three and one-half months after being treated, she was able to return to school and was soon leading her class again. She has menstruated regularly every month for the past three years. (2) A young woman of twenty was forced to give up her position as bookkeeper for a large firm. Two months after treatment she was able to return to her desk. She gained rapidly in color and strength, and enough in weight to develop into a very beautiful girl. Love, courtship, and engagement followed. In this case, however, amenorrhea persisted somewhat longer than we had hoped. After the eighth month menstruation was reestablished. Some months later the patient was married and within a year became the happy mother of a healthy normal child. (3) A childless share cropper's wife of twenty-two was kept in bed about three weeks of each month with severe hemorrhage. She became weak and despondent, and thought she was only a burden to her husband. Amenorrhea lasted only four months after treatment. It brought, however, health and strength. This woman bore two healthy children within three years from the time of her treatment.

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DISCUSSION

DR. FRANKLIN B. BOGART (Chattanooga): I want to express my appreciation of the excellent paper of Dr. Anderson and Dr. Lawrence. In recent years the value of radiation therapy in malignancies of the cervix has been firmly established. I do not believe that there has been a proper realization by the profession and the public of the improved results that radiation therapy offers in cases of carcinoma that have involvement of the parametrium, whether the site of origin be in the cervix or the body of the uterus. These improved results are largely due to increased filtration and the present method of fractionally administering the radiation with the increased total dose.

I agree fully with what the essayists have said concerning fibromyoma and excessive hemorrhage near the menopause.

The group of cases discussed under the heading "Amenorrhea and Scanty Menstruation" are very interesting, and it is certain that in these cases radiation therapy is too seldom used. Needless to say, in these groups of cases as in all others here discussed, the closest cooperation between the gynecologist, the internist, and the radiologist is essential. The results have been very gratifying in the few cases that I have treated of this type. It is interesting to speculate on the mechanism by which the comparatively small doses of roentgen ray, given to the pituitary gland and ovaries, seem to increase the output of antuitrin-S and theelin. I share the belief of most radiologists that there is no such thing as a true stimulating effect of cell function by roentgen ray or radium radiation. The effect of comparatively small doses of radium on chronic inflammatory infiltrate is well known. The opinion has been expressed by Desjardins and others that the favorable result produced in these cases is due to the fact that the roentgen rays cause an absorption of the inflammatory infiltrate which often involves the ovaries in these cases and which probably involves the pituitary gland. By this absorption of the inflammatory infiltrate the glands are allowed to function more normally. Such an explanation of the favorable results obtained seems to me a more logical one than to think of the effect as a true stimulation. It is certainly true

that favorable results are obtained in many of these cases.

I would also like to endorse what the authors have said about menorrhagia and metrorrhagia in young women. The results I have had in these cases have been most gratifying. In properly selected cases radiation therapy is the method of choice and roentgen rays are much superior to radium in the management of these cases.

DR. J. L. CROOK (Jackson): I am intensely interested in this paper. I came in here from the House of Delegates to hear it. I am interested not from the standpoint of the roentgenologist or specialist, but from the standpoint of the gynecologic surgeon. Wherever I can consistently and conscientiously use radium I am going to do it. When I do not think radium is the best treatment I will very gladly turn over my patients to the expert in the use of the roentgen ray.

There are certain features of that paper that to me are very unique and rather hard to reconcile. From the scientific standpoint it is extremely interesting to find that the same powerful, mysterious, marvelous agency that checks hemorrhage and prevents excessive hemorrhage in cases of metrorrhagia, produces hemorrhage, normal hemorrhage, in cases of amenorrhea.

Looking at the fibromyomatous cases and those cases of cancer of the cervix, that is where we come together as surgeon and as specialist in the use of the X-ray and radium. I want to record my opinion as distinctly favorable to the use of radium. The very fact that we can accomplish at one sitting or at one hospitalization of, say, forty-eight hours, what it takes a number of weeks to accomplish by the X-ray is the chief reason I prefer it.

I bought my radium about thirteen years ago. I was going over in my mind a moment ago the oldest successful cases of cervical cancer that I can recall. I recall three, two twelve-year cases absolutely unmistakably cancers of the cervix, where radium was used and both women are well and happy today; and I recall another case, about an eleven-year case, where I did not know exactly what the diagnosis was. The patient had been having excessive hemorrhage from the uterus. She was a woman about forty-two years old. In that case I did a curettage of the uterus in order to get the scrapings for microscopic examination, but after doing the curettage I inserted radium for forty-eight hours within the uterine body. In about six or eight days I got back a report from the laboratory that it was unmistakable carcinoma. I then did a panhysterectomy and removed everything.

That patient recovered, but it was a pretty stormy convalescence. She got absolutely well. I had not seen that patient except socially for nearly two years until three months ago when she came back with unmistakable evidence of cancer at the stump within the vagina. Then I used radium up against the stump; I did not insert the needles, but

placed the radium against the stump in the vagina, and was able to get an absolute cure in that case. This, I think, was a recurrence. The patient had been operated on ten years before and is now absolutely well again.

I agree with the essayist in the fact that radium is not to be used in cases in young girls because of the fact that you may absolutely prevent the power of conception later.

The entire paper was one of extreme interest, and I wish to express my profound appreciation of it from the standpoint of the specialist and also to say that it certainly does interest the surgeon and gynecologist as well.

DR. SHIELDS ABERNATHY (Memphis): Members of the Society, I have two reasons for getting up here. In the first place, Dr. Barr was to open this discussion, and he would disagree with everything that was said, so I want to agree with a few things. My main purpose in getting up is to try to dispel a little of the illusions or delusions that exist today in regard to irradiation. I have been down the road in this matter and I have heard irradiation from X-ray and from radium cussed, discussed, agreed upon, for seventeen years now, since 1919.

There is no difference in irradiation. It is simply a means of application. In the light of our present knowledge the correct way of using irradiation is a combination of methods best suited to the case. In 1922 I had just begun to find out a little something about the use of irradiation in pelvic conditions, and I read a little paper before this association and expressed certain views that I still hold.

In regard to fibroid tumors of the uterus, I still think that they are fundamentally surgical. It would take a good while to go into the various phases of fibroid tumors to back up my reasons for that. However, as Clarke brought out a good many years ago, in the uncomplicated fibroid tumor X-ray radiation and radium irradiation are very splendid measures, and the successful results justify the use of these measures. However, a very careful, searching gynecological examination should be made in all of these cases before they are treated radiologically.

Another thing that the essayist did not bear down on which I want to help him out in is the use of the diagnostic curette in all cases of menorrhagia in women past forty years of age. It has been my practice for a good many years, even though I had a very definite bleeding fibromyoma of the uterus in which there wasn't much question in my mind as to the diagnosis to curette these women just before I opened the abdomen.

The percentage of fundal carcinomas that I have found in these cases has been relatively small, but on the other hand I have seen a great many cases that have been treated for fibroids elsewhere in which an adenocarcinoma of the fundus existed.

Jumping to treatment of carcinoma of the cervix,

both physical agents are in universal use in the best-equipped clinics in the country. I think Healey has probably given us the best régime for the management of carcinoma of the cervix. I have followed that now for the last two and a half years and I believe my results are better than they were prior to that time.

All cases of carcinoma of the cervix in which there is any infection are treated with X-ray irradiation first. It is most gratifying to see these cases clear up, and as a matter of fact, I have seen almost complete regression of masses, of cauliflower growths, following the use of X-ray irradiation, but that does not mean that you have completed the work. Healey and a great many other men of large experience claim that irradiation with radium should follow this. It has been definitely found that the preparation of the field, the clearing up of the infection, produces a field that is more susceptible to irradiation by radium.

In so far as the dosage is concerned, I beg to disagree with Dr. Anderson a little about larger doses. Some of the European workers use very large doses of irradiation with radium, eight, ten, and twelve thousand milligram-hours. There is a tendency since X-ray irradiation has been brought more prominently into play in the treatment of these cases to reduce the dosage. For seventeen years I have been using rather large doses. I used to give approximately seven thousand to seventy-five hundred milligram-hours in practically all cases. That was before we began to use the Healey technic. Since that time I have been reducing my dosage, and in a good many cases I have used as low as five thousand milligram-hours.

DR. W. S. LAWRENCE (Memphis): I expected to have an awfully good time here this afternoon with Dr. Barr discussing this paper. As Dr. Abernathy remarked, he would have taken the surgical side of every position in which Dr. Anderson took the radiological side. Dr. Barr and I had a similar discussion of this sort once before on a paper somewhat similar to this in scope, and we had a nice time with the discussion. I regret very much that he was unable to get here this afternoon because I know that he looked forward to it with some degree of pleasure.

Dr. Barr after that last discussion wrote me a very nice little note from Nashville, recognizing the fact that he had taken great pleasure in overcoming my views on the subject.

I must explain one thing that Dr. Crook seems to have gotten a little wrong, if you will pardon me. I do not think that Dr. Anderson said that it was our practice to use X-ray to the exclusion of radium in treating carcinoma of the cervix. Certainly we believe exactly as Dr. Abernathy does, that both agents or methods of radiation should be used in practically all cases. It would seem to be something like this: If the case is very early, radium may produce a cure alone and will in a great many cases, but if X-ray is going to be given,

radium should be given first in the very early cases where the lesion is all in the visible part of the cervix, or in the cervical canal where radium can be placed right against the diseased tissue. However, who of us can tell whether it has spread a few millimeters only from where the radium is placed or whether some few cells have strayed up into the broad ligaments already?

That being the case, I think it is wise to use radium and X-ray on all of these cases, the combined method. But in early cases use radium first and follow by X-ray. In later cases where the disease has already spread some distance to other pelvic organs, radium will not touch the outlying zone. In fact, if there is anything in Dr. Anderson's idea of a stimulating dose of X-ray, it would stimulate the growth of the cells possibly. At any rate, you want to head it off and not let it go any further. So irradiate the whole pelvis by means of rather massive or at least full doses of X-ray, and stop the spread of the disease. Then if there is any of it left in the cervix at all after the full effect of the X-ray has taken place, put radium in the cervix and against the cervix in adequate but not extreme doses, and if there is no visible trace of the disease left, as there will not be in a good many of the cases, put radium in anyway to get what *may* be present. It is the proper and reasonable and successful combination and use of both of these agents that has so greatly increased the prospect of saving the lives of these patients.

Dr. Crook has reproached himself to some extent for the last several years for having used too much radium in the case of a young girl. If he used only six hours, that is 600 milligram-hours, and if the menstrual function was reestablished, as I believe he said it was, I do not think that had anything in the world to do with the fact that she has never borne a child. A lot of women do not bear children who never went near a capsule of radium—or Dr. Crook either. (Laughter.)

DR. W. D. ANDERSON (closing): Mr. Chairman, I have very little to add to the discussion. I appreciate it thoroughly and enjoyed it all.

I do want to say one thing, however, in answer to Dr. Abernathy with reference to the curette. We depend on all of our cases having a thorough diagnosis made beforehand. Therefore, we do not curette them, but we rely on the gynecologist's diagnosis. For this reason, this was not mentioned in the paper.

There is one other thing that I want to say, that is, my reference to increasing radium dosage I admit was based in large part on some of the statistics coming in from the foreign clinics. Some of those men have found, in using very large amounts of radium over a short period of time, that they get trophic disturbances in the bladder, such as ulcer and vesicovaginal fistula, so by decreasing the amount of radium used, and using it over a longer period, it will decrease these undesirable results.

LOCAL ANESTHESIA IN THE REDUCTION OF FRACTURES*

E. DUNBAR NEWELL, M.D., F.A.C.S., Chattanooga

DURING THE PAST fifteen years, ending December 31, 1934, we have treated at our private clinic 5,910 fractures. The diagnosis of every fracture was confirmed by an X-ray film, and a complete record and follow-up have been made of every fracture.

As a pupil and for many years an enthusiastic admirer of the monumental Rudolph Matas, of New Orleans, I necessarily have been keenly interested all my professional life in local, infiltration, and regional anesthesia. Even as a student in dear old Charity Hospital in New Orleans, I was amazed and thrilled to see Professor Matas resect the superior and inferior maxilla under local and regional anesthesia, amputate arms and legs, and resect joints. Thus, I have always set fractures and reduced dislocations of phalanges and metacarpal and metatarsal bones under infiltration and regional anesthesia. Also, in open operations for reduction of fracture of the radius and ulna, tibia and fibula, and fractured patella, in seventy-five per cent of the cases operations have been done under local and regional anesthesia. In operations on the skull for depressed fractures, for compound fracture of the skull, for extradural and subdural hemorrhage, we have preferably used for many years infiltration anesthesia.

However, it was not until the fall of 1927, while watching the practical, ingenious Lorenz Boehler, in his clinic in Vienna, inject a two per cent novocain solution between the ends of the broken bone and secure, in a few minutes, perfect analgesia and perfect muscle relaxation, that lasted usually from one to one and one-half hours, that I realized what a marvelous adjunct to the treatment of fractures we had in local anesthesia. However, I was not impressed with, nor have I been enthusiastic about, the use of regional anesthesia for setting fractures of long bones and for reducing

dislocations of large joints as practiced in Boehler's clinic. I believe that ether anesthesia is more practical and safer in the majority of such cases.

Every doctor who treats or may treat fractured bones should familiarize himself with the simple and safe method of producing complete analgesia at the site of fracture and complete muscular relaxation, by injecting from five to fifty cubic centimeters of two per cent sterile novocain in normal saline solution directly into the hematoma or blood pool between the ends of the broken bone or bones. If the hematoma is present and the two per cent novocain solution has been injected into the blood pool, complete analgesia will occur in about ten minutes and will last from one to one and one-half hours. If there is no definite hematoma because the fracture is of the impacted or greenstick variety, then it will be necessary to inject the solution into the muscular tissue adjoining the fractured ends and also under the periosteum to get analgesia and relaxation; in other words, to use infiltration anesthesia.

Anesthesia Used.—In our clinic we have used two per cent solution of novocain in normal saline. The amount varies from five to fifty cubic centimeters, but after injecting twenty-five cubic centimeters we watch the patient carefully for toxic symptoms. We have never had a death from novocain poisoning, but we do occasionally get toxic symptoms in infiltration anesthesia when using more than ten cubic centimeters of two per cent novocain solution, so this strength solution must not be considered entirely harmless.

Technique of Injection and Paraphernalia Necessary.—The instruments and materials needed are: one ten cubic centimeter glass syringe, one fine needle and one long medium shaft needle, one hemostatic forceps, two per cent novocain solution in normal saline, ether and iodine, cotton applicator and gauze.

*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1936.

The operation must be carried out with most meticulous regard for surgical asepsis—and this precaution is so easily, quickly, and economically taken care of with the simple equipment just named. An outfit of this description should be carried as a sterile fracture package in the surgical kit of every doctor who does, or may do, fracture work. In our clinic all fractures are treated as an immediate emergency whether the patient is admitted during the day or at night. An X-ray picture is made at once. If in our judgment the fracture should be reduced under local anesthesia, if it is a simple fracture, the site of the fracture or fractures is noted on the X-ray film and then verified by palpation with the finger. The area is cleansed with ether and a small area is painted with iodine; at this site a wheal is made with the fine needle, a forceps, of course, being used to apply the needle to the syringe, and the soft tissues to the bone are injected slowly and gently so as to avoid pain. The long needle is then attached and an attempt is made to locate the hematoma surrounding the ends of the broken bone or bones. When the hematoma is found, by slight suction or without suction a light colored fluid is aspirated into the syringe, then the two per cent novocain solution is slowly injected into the blood pool. If the blood is from a vein, it will be much darker than the fluid from the hematoma. Injection is continued without withdrawal of the needle until there is analgesia and complete muscular relaxation, or marked tension of the tissues from the infiltrating solution. When the needle is withdrawn, the opening is sealed with gauze and kept sealed until the fracture has been reduced.

Many years ago, a dentist gave me an inspiration about local anesthesia. He had the reputation of doing dental work without pain. I called to see him and noted that after making his anesthetic injection, he left this patient to work on another patient, thus giving the anesthetic time to deaden the tissues. Reduction should not be attempted under ten minutes, and often the analgesia and relaxation is not complete until thirty minutes have elapsed. Relaxa-

tion and analgesia thus secured will last from one hour to one and one-half hours. The more one uses this method, the more enthusiastic he will become, as there is so little pain and discomfort, such perfect relaxation of muscles, and usually such ease of reduction.

Indication.—Local anesthesia can be used in all fractures, even compound, except fractures of the spine and the pelvis. Age is no contraindication.

Advantages.—An assistant is not necessary and, in isolated areas, the patient is saved much suffering and long waiting until an assistant can be called to give a general anesthetic. It allows for repeated manipulation without the necessity for a second anesthesia or a long continued anesthesia. If the fracture is associated with brain trauma, as so many of the fractures due to automobile accidents are, and a general anesthetic cannot be given, local anesthesia must be used. Too, when there is profound shock, general anesthesia cannot be used, but local anesthesia can often be used and will actually lessen shock by relieving the pain of the jagged end of bones mutilating the soft parts. Most patients are profoundly grateful for the local anesthesia and will cooperate fully and helpfully as so many have a horror of being put to sleep.

In our clinic every fracture is treated as an individual case and not by any set rule, formula, or standard. We study the fracture on the X-ray film; we study the patient, the surroundings, and then we decide whether we shall use local anesthesia, nitrous oxide gas and oxygen, or ether anesthesia. We are profoundly impressed with the marvelously safe and simple method of reducing fractures by injecting a two per cent novocain solution into the hematoma surrounding the broken ends of bones, but we are still using nitrous oxide gas and oxygen and ether anesthesia for reduction of fractures. We will continue to use that method of anesthesia which seems best adapted to the particular patient, time, and conditions present.

DISCUSSION

DR. HENRY G. HILL (Memphis): It would be presumptuous on my part to make any comments

in an effort to add to or take from Dr. Newell's splendid paper. Results that he has obtained in the treatment of so large a series are quite remarkable. Dr. Newell has had a very extensive experience. He has used local anesthesia in a great number of cases, and he certainly is to be commended for the ease and safety with which reduction is accomplished.

Reluctantly I must admit that I belong in that twenty-five year group which he speaks of. I think probably I have passed up an opportunity to use local anesthesia in some cases, where it would have been the anesthetic of choice. I have used it in fractures of the humerus, the type that Dr. Newell called to your attention. It facilitates matters a great deal. The patient is able to cooperate, and the fracture can be reduced with the patient in a sitting position. However, I have had toxic symptoms develop when the patient was in a sitting position while novocain was being used. That, of course, creates an alarming situation and general anesthesia becomes necessary. Local anesthesia is especially indicated, as Dr. Newell has shown you, in the reduction of certain clavicular fractures.

He has reported 5,910 cases of fractures. That is a tremendous number, and he can speak with authority. I do not think anyone in the South has had a larger series.

I have enjoyed his paper and wish to thank him for his contribution.

DR. W. S. NASH (Knoxville): Dunbar Newell and I have been fussing, fighting, scrapping, playing with one another as good fellows for more than a quarter of a century, and he tells you right here face to face that all fractures should be X-rayed. *I do not believe it.* He is about to get to the point where he will tell you that all fractures should have a local anesthetic. *I do not believe it.*

I am of the opinion that his general classification will hold good, for it has held good for him for thirty years, and that is, that each and every fracture is a law unto itself, that it must be treated individually, and that the personal equation should each and every time be duly considered.

Now for a Colles' fracture I am not wedded to nor sold upon the idea that a man should inject into the pool of blood when it is so easy to go above and get out of the field or area of danger and to block off.

I would not for a minute advocate at this meeting that these country doctors (and I see plenty of them around here—these fellows whose hair stands on end and who thirty years ago thought they were pretty) go out and inject novocain into a pool of blood in a simple fracture. I just could not make up my mind to do that. But I could tell them to use the same per cent of novocain and seek the proximity of those large nerves which will thoroughly eliminate all pain and bring about a muscular flaccidity to such an extent that you can do just as good a job if not a better job

and with less danger than my friend from Chattanooga suggests.

The most beautiful place to use a local anesthetic is in or near the site of the blood pool or even into the site of the blood pool as is suggested here, and that is the clavicle. It is ideal.

Now you men who live in the country can do that work and you can do it beautifully; you can get the best of results and you can get many of them, many times without performing it. It is just a little strange that you have in this case of fracture of the clavicle every advantage of the situation with the patient sitting up, but you remember what the thoracic girdle is and how you can manipulate it, how you can put the bones into position, and without much pain if at first you do not succeed, you can try, try again.

Now do you need X-ray? He tells you to X-ray every one of them. No, you do not need any X-ray, any more than you would need an X-ray for a fracture of a patella or an X-ray for a fracture of the head of the radius. You do not need X-rays of those things, so do not X-ray all of them.

Do not forget that in the manipulation you should use care. Do not forget that you should use some speed. Do not forget that they still make high-grade chloroform. Now he did not say a word about that. Do not forget that you have a safe anesthetic in ether, nitrous oxide and oxygen. So also in novocain (and with that just add a little bit of adrenalin). He did not say anything about it, but he does, I know he does.

Make every case a law unto itself.

I appreciate Dr. Newell's efforts. He has had a great many more fracture cases than I. Frankly, he has had better results, though I admit I have had good ones.

DR. E. DUNBAR NEWELL (closing): I guess you all know that in all the big clinics in the United States and Europe they are using this method very extensively, and I do not say they are using it exclusively because that is not true, but they are using it very extensively in all the big clinics of America and Europe now. So far no death has been reported, but I warn you that I think after you have injected twenty-five cubic centimeters you should watch your patient, because I could readily see how you could have a death, because we have had some toxic symptoms, not in fracture cases, but in the use of infiltration for operation on the soft parts we have had some toxic symptoms after using ten cubic centimeters of a two per cent solution, so I think you should use it with some thought of the danger. Not that any death has been reported, but I am sure some death will be reported if some of the men continue to use the 100 cubic centimeters that has been reported in some of the clinics. Personally we have never used over fifty cubic centimeters, and usually it only requires ten to twenty cubic centimeters. We have on a few occasions used fifty, but very few. So far we have never

had any alarming symptoms from it, but I do not think it is entirely free of danger.

I quite agree with Dr. Nash that the man who does not know and realize surgical asepsis in its most minute detail should not use this method. I think it is incumbent upon every doctor who practices medicine to learn the details of aseptic surgery and do it for this work because it is so simple; anybody can learn how to do it if he has a conscience, and I do not think we are doing our patient justice unless we do. Remember this, and it is the most impelling thing in medicine: if you do not learn it, your patients will learn about it, and they will force you to do it; if they do not force you to do it, they will force your neighbor to do it. In other words, if we do not educate ourselves the laity is going to educate us. Do not forget that. The lay papers and the lay magazines are filled with well-written medical articles, and the lay public of the United States is getting health minded. If

you do not learn the latest things about taking care of your patients, some of your patients will call you up and ask you about it and ask you why you do not do so-and-so, that they are doing so-and-so in Chicago or New York or Baltimore or Cleveland. I have had that happen to me, and I am quite sure it will happen to you. Maybe they will not always tell you what they are thinking about. So it behooves every man who does any fracture work to learn this simple, safe method of reduction of fractures, because the patients all want you to do it after you have learned once. They want to know why so-and-so put them to sleep when it could be done so easily and so simply without pain, and the patient can leave the hospital at once.

I just throw that out as a warning. If you do not learn for the sake of knowledge, you had better learn it for the sake of your practice.

AN INTERFERING AGENT IN HUMAN BLOOD GROUPING

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IN THIS ARTICLE an attempt is made to disclose a few of the many discrepancies in blood grouping with particular emphasis of an enzymatic agent which is often encountered but is frequently overlooked by the routine methods.

The isoagglutinogens being dominant mendelian characteristics, and the finding of an interfering agent in several specimens of blood, which changed the groups, prompted this investigation. These individuals' bloods were found to be in groups that could not have been derived from the combination of their parents; therefore, it was necessary to carry out this experimental work to attempt to find the source of error.

The first observations on differences in blood groups in normal individuals were made by Landsteiner in 1900. Landsteiner's investigations were prompted by the discovery of the species specificity, which raised in his mind the question whether similar specific differences, presumably of a minor order, existed between individuals of the same species. He chose the simplest possible methods of mixing the plasma of one individual with the cells of another. In some of his experiments he noted that the cells were strongly agglutinated, and in others the cells were unaffected by the mixing. By 1902 the four blood groups were discovered and a practical method of testing was to determine in which of these groups an individual belongs.

The term isoagglutinin is defined as being a substance in blood serum of an individual which has the power to agglutinate (or clump) the red blood cells of another individual belonging to the same species.

The isoagglutininogen is the substance in the red blood cells that produces the isoagglutinin in the serum, and upon this basis the blood groups are determined.

The human blood groups are divided into four groups, which are illustrated as follows: Moss classification.

GROUP	I	II	III	IV
Agglutinogens contained in red blood cells	AB	A	B	O
Agglutinins contained in blood serum	Absent	b	a	ab

When serum and cells of the same group are placed together, no agglutination is noted.

When I serum is placed with cells of any group, no agglutination takes place.

When II serum is placed with cells of group I, III, agglutination takes place.

When III serum is placed with cells of group I, II, agglutination takes place.

When IV serum is placed with cells of group I, II, III, agglutination takes place.

Group IV is considered a universal donor and group I universal recipient.

The blood, in addition to possessing the four classical groups AB, A, B, and O, or as frequently referred to as I, II, III, and IV, is now known to possess two other specific agglutinogens called M and N. Landsteiner and Levine said that these are independent of the four groups, and every person has inherited one or the other, or a combination of the two like the blood groups.

Von Dungenn and Hirszfeld have decided that A and B should be divided into subgroups A_1 , A_2 , etc. These subgroups and the M and N factors are never considered in clinical practice, since they are not tested for when seeking a donor for transfusion. They are inherited independent of A and B, and their importance is mostly confined to medicolegal cases.

There are many sources of error encountered among various methods in determining the blood groups, but only those with direct reference to interfering substances will be discussed here.

Weiner observed false negative reactions in bloods tested with low titer testing sera, although the testing sera may have been at

one time of higher titer and their power of agglutination suddenly lost.

False positive reactions, such as pseudo-agglutination, have been known for a long time, particularly in persons suffering from an acute infection and their red blood cells possessing the tendency to settle rapidly.

Landsteiner and Levine have described two kinds of "cold agglutinins," one being nonspecific in its action, and the other, to a certain extent, specific. However, a sharp line cannot be drawn between the two kinds of agglutinins.

Kettle found autoagglutinins present in most normal sera, but the power to agglutinate is lost rapidly when the temperature is raised to that of the body.

Thomsen first observed that certain specimens of blood, which had been kept for some time, became panagglutinable, i.e., when such bloods were suspended in saline solution, they formed an even suspension which could be agglutinated by the addition of practically any normal human or animal serum, including that of the patient from whom the blood had been obtained. Thomsen noted that the property of panagglutinability could be transferred to fresh cell suspensions by adding one drop of the panagglutinable fluid and then allowing the cells to stand at room temperature for twelve to twenty-four hours. Weiner has observed this phenomenon not infrequently in menstrual bloods.

The object here is to show how easily results may be misleading, and the person having his blood tested on two occasions may be classified in two different groups; therefore, giving one the impression that he has changed his group. Until now there has been no authentic case of group change reported. These isoagglutinogens have been proven time and again to be inherited characteristics; therefore, the changing of a group is considered impossible.

While conducting a research problem with special regard to the blood groups, a most unusual phenomenon was encountered among six specimens of blood, all from different individuals of the same family and belonging to either group AB or B with parents of groups A and O. It is definitely

known that parents belonging to groups A and O could not produce a child in any group except A and O. These results aroused considerable interest, being contrary to the general statements found in textbooks on the subject.

The first consideration was that of step-children, and the least of all was that of illegitimacy. Both of these were immediately ruled out. The next step was to go and obtain the second specimens ourselves in order to verify our first results. The second specimens did not reveal the peculiar reaction, but did disclose the bloods to belong to the groups that were possible for their parents to produce, such as A and O. Fortunately, two of the first samples were preserved in the refrigerator; therefore, making it possible to correlate the first specimens with the second. Case No. 1 was found to be agglutinated by the standard serum A and failed to be agglutinated by the standard serum B; therefore, results of this test would place the person in group B. The second examination proved the blood to belong to group O. Case No. 2 was found to be agglutinated by the standard A and B sera. This person was considered to belong to group AB. These reactions took place at room temperature (20 degrees C. to 27 degrees C.), although they could be greatly accelerated at lower temperatures.

The supernatant fluid from the first specimens of cases Nos. 1 and 2 was saved and cultured. The cultures disclosed a gram negative bacillus which corresponds very closely to the description of Thomsen's B. He stated this organism was an accentuating factor and would allow what he called an agglutinin (L) to act. The principle on which this agent acts is as follows:

A third agglutinin and agglutininogen (L) are present in human blood and will act specifically when the blood is in a weak suspension and in the presence of a bacterial enzyme. Thomsen claims that the enzyme acts by transforming a latent agglutininogen present in human and animal cells into an active receptor which Friedenreich calls agglutininogen T. Since agglutinins for agglutinogens T are normally present in almost all human sera, such transformed

blood cells will react like group AB cells.

These findings are not in entire agreement with those of Friedenreich, as only one-half of the bloods proved to be in false group AB and half in group B. Hence we may conclude that the B typing serum was weak in agglutinin T, or L as Thomsen named it. Although the sera possessed a strong titer for agglutinins A and B, which is all that before now has been expected of typing sera, it is not correct in the light of these experiments to consider this phenomenon as a panagglutination in all sera. Neither can it rightfully be called the normal cold-agglutinin, but it does seem plausible that these cells may have been sensitized by the enzyme, thereby allowing the cells to be agglutinated by the cold-agglutinin at a higher temperature. If this be true, it is logical to think that other catalysts, such as a chemical, or biochemical products might produce a similar unexpected change in cells. When the enzyme cultures were planted many times, the agglutination became weaker, and, upon chilling the cell-serum-enzyme mixture for ten minutes, agglutination became much stronger and remained so at room temperature for one hour or more.

A personal communication was made with Drs. Thomsen and Friedenreich of Denmark, in regard to what they thought was the changing factor in this blood. Dr. Thomsen seemed to think that it was similar to the (L) agglutinin described by him, but the importance of the possible changes were not revealed in the American literature; e.g., in the case where a person was in group OO and changed to group BO, instead of group AB as would be expected if panagglutination always took place. Therefore, it is possible to find a person of OO group to be changed by the enzyme to any of the four groups.

In order to overcome this particular

source of error with the interfering agent, the blood must be examined within twelve hours after withdrawal if collected by suspension method. Concentrated blood seldom, if ever, possesses the power to agglutinate falsely, according to some authors. Further work is necessary along this line since many interesting factors concerning blood transfusion may be discovered. The second method of detecting this phenomenon is by withdrawing the supernatant fluid from the suspicious cells and placing in a refrigerator for twelve hours or longer with known O cells. If the cells agglutinate in any serum, the agent is acting. The third and best method is to test the cells in doubt with AB serum and, if agglutination takes place, the agent is acting and allowing the third agglutinin (L) to act upon the red blood cells.

These hints should be of particular warning to laboratory workers in hospitals where blood may remain in the refrigerator overnight before typing or where accurate records are kept on donors.

I am indebted to Dr. Henry L. Douglass, and wish to express my sincere appreciation to him for referring me this material.

SUMMARY

Six cases have been used to illustrate the action of an interfering agent in blood grouping, and a discussion is made of how this agent affects the blood cells and leads to misleading results.

Methods for testing cell suspensions for the agent are outlined.

Many sources of error may be accounted for in blood typing on this basis.

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THE JOURNAL

OF THE

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H. H. SHOULDERS, M.D., Editor and Secretary

OCTOBER, 1936

EDITORIAL

A GRATIFYING ASSURANCE

The President of the United States made an address in Jersey City recently at the dedication of a medical center in which he took occasion to pay tribute to the medical profession and to give assurances that the administration contemplates no action detrimental to the medical profession. The expressions were as follows:

"Let me with great sincerity give the praise which is due to the doctors of the nation for all that they have done during the depression, often at great sacrifice, in maintaining the standards of care for the sick and in devoting themselves without reservation to the high ideals of their profession.

"The medical profession can rest assured that the federal administration contemplates no action detrimental to their interests. The action taken in the field of health as shown by the provisions of the splendid social security act recently enacted is clear.

"There are four provisions in the social security act which deal with health; and these provisions received the support of outstanding doctors during the hearings before Congress. The American Medical Association, the American Public Health Association, and the state and territorial health officers' conference came out in full support of the public health provisions. The American Child Health Association and the Child Welfare League endorsed the maternal and child health provisions.

"This in itself assures that the health plans will be carried out in a manner compatible with our traditional social and political institutions."

The assurances given in the statement quoted must be taken as a source of gratification for the medical profession because much has happened in the last three years to engender fear, and only recently there appeared in the magazine *Forum and Century* an article by Mr. James Rorty in which the author made it appear that he understood clearly the plans and intentions of the administration with respect to the socialization of medicine.

It is evident that there are people connected with the administration who do not speak the mind of the President every time they speak.

MEDICAL SOCIETY MEETINGS

We wish the JOURNAL to contain matter of general information as well as scientific matter. For this reason we are adding information as to the place and date of medical meetings which may be of interest to the membership. Please refer to the news section for this information.

MEDICAL ECONOMICS

A great deal has been said and written on the subject of medical economics in the last few years. A vast majority of this literature will not bear critical analysis.

It has seemed to us that many errors may be attributed to a false approach to the subject. By many the subject is segregated or separated from the broad subject of economics and then treated as a separate thing. The more one thinks and investigates the more the conviction grows that medical economics cannot be treated in such a segregated fashion. Illness is related to food, to housing, to clothing, to crowding, to everything that has a bearing on health. The effort has been made to offer some medico-socialistic plan as a panacea for all the ills of man and back it up by data collected in some manner by somebody and interpreted to prove the point.

In the second place, some alleged authors or investigators have endeavored to treat

the subject, "Economics," as a subject related to finance only. They glibly reduce the whole problem to the simplest financial terms possible and then use their arithmetic to arrive at a conclusion. This is erroneous for the simple reason that finance is only one element in the broad subject, "Economics."

The exchange of goods and services was accomplished by people before money was ever thought of. Money and credit facilitate these exchanges, but underlying the whole of finance and economics is the human element—human nature. This embraces all the elements which make humans what they are with their individual desires—ambitions, loves, hates; their religious ideals; their hopes and fears, joys and sorrows; their virtues and faults—each and all have a bearing on economics. Those factors play just as prominent a part in the subject of medical economics, if not a more prominent part, than any other phase of economics.

A housewife may buy groceries of a standard brand from a groceryman she does not know. She considers cost primarily. This same rule would not apply in the case of the medical care for her sick child. Other factors come into play in determining her actions in the case of a sick child. These other factors are related to economics and finance, but their exact relationship cannot be estimated by anyone.

Those who attempt to reduce the subject of medical economics to simple financial equations are bound to make the gross error of drawing the wrong conclusion.

An office call, a home call, a hospital call, an operation, a laboratory procedure—these and many others are items which compose medical care, but the big overwhelming factor is the judgment, the skill, the devotion, the character and interest of the doctor on the case. These big factors cannot be reduced to such simple equations.

These are some of the reasons for the errors that are made.

SOCIAL WELFARE

Over nineteen hundred years ago a great prophet said, "The poor we have with us

always." This prophetic statement certainly has held true up to now.

The relative proportion of people, who may be classed as poor, varies from month to month and from year to year, but the time has never come when the poor were not with us.

Rendering service to the poor and needy is not a new enterprise. It is one of the tenets of all the religions we know anything about. It is dictated by all the higher instincts of human nature. People have been honored over and over again for the sacrifices they have made for the benefit of the poor.

There are people who have placed their earnings and their inheritance upon the altar of sacrifice for the benefit of the poor. Such people gave their own efforts and earnings.

An instance is recorded in which the Great Physician subjected an alleged follower to test. The alleged follower pretended to have the virtue of charity and he approached the Master and asked him what he should do to be saved. The Master told him some things to do and in reply he said, "I have done these from my youth." Then the Master said, "Go sell all your goods and give them to the poor." It is recorded that the young man went away with a heavy heart because he had great possessions.

Recently we are witnessing a different sort of charity leadership from that we have been accustomed to. It is the leadership of those who draw nice salaries and make no sacrifices whatever themselves in their ministrations to the poor.

In the last few years we have witnessed the expenditure of enormous sums of money by charity organizations, by municipalities, counties, states and the nation. As a result of these expenditures a new type of charity leadership has been created.

Many of the people who hold high salaried positions were never noted for their charity activities prior to the creation of lucrative positions.

Notwithstanding all this expenditure and new leadership little constructive or corrective effort has come from this leadership.

The social worker, in the main, merely

requests the appropriation of more money to finance more salaries. The politician in order to display his type of generosity pledges his influence in the same direction. These activities, of course, do not accomplish a solution of the problem at all.

It seems to us that the depression has taught us a few lessons. Lesson number one is that a majority of people have been able to take care of themselves in spite of the depression. This means, of course, that a majority of the people of the United States can take care of themselves in our democracy both in good times and in bad.

Recently it was pointed out that the number of skilled persons on relief rolls is very small, the statement said in effect that a relatively small number of these people can perform skilled labor. Insofar as we know, no definite study has been made of the people on relief to determine their conditions before the depression and their capacity to earn at the present time.

All the developments that have taken place, it seems, have brought us face to face with one serious question. The question is—shall the liberty and the democracy of a majority of citizens who have the skill and ability to take care of themselves be destroyed in order to accomplish financial benefits for the group composed of those who cannot take care of themselves when adversity comes and many of whom have not taken care of themselves even in good times.

In our opinion, this problem will not be solved by the politician, nor will it be solved by the social welfare workers whose source of income is the fund provided by thrifty earners. It is too much to hope for that group to propose constructive measures aimed at the correction of these conditions.

The problem in our opinion must be approached from several viewpoints. First, the humanitarian viewpoint; second, the economic viewpoint; and, third, the biologic viewpoint.

The biologic viewpoint is concerned with the biology of the situation. It is logical to raise the question whether a lot of people who have not earned their own living are not biologically incapable of taking care of

themselves. According to figures that have been published, they have and exercise the function of reproduction.

If a study of the problem is approached from all three of these viewpoints, in our opinion, some solution may be found. Certainly such a study should be made. The course of dissipating a large proportion of the earnings of the fit to accomplish benefits for the unfit without correcting anything offers no solution.

DEATHS

Dr. Luther A. Parker, Saltillo; University of Tennessee, College of Medicine, 1900; aged 61; died September 28 of myocardial disease.

Dr. T. Y. Carter, Westmoreland; University of Tennessee, College of Medicine, 1905; aged 56; died suddenly of a heart attack on September 28.

Dr. J. T. Graham, Booneville; Vanderbilt University, School of Medicine, 1883; aged 82; died August 27.

Dr. E. A. Timmons, Columbia; Vanderbilt University, School of Medicine, 1900; aged 62; died September 3.

Dr. I. N. Johnson, Martin; aged 77; died September 3.

Dr. Hayes Abernathy, Adamsville; Memphis Hospital Medical College, 1903; aged 60; died September 3.

RESOLUTIONS

On July 9, 1936, the Chattanooga and Hamilton County Medical Society lost one of its most valued members and past presidents in the death of Dr. W. G. Bogart. He was born in Sweetwater, Tennessee, April 12, 1858, and received his early education in the schools of Sweetwater, and received his degree of Doctor of Medicine from the University of Nashville in 1882.

He returned to Sweetwater to practice with his father. He came to Chattanooga in 1888 and established his practice and for a period was professor of gynecology for twenty-one years at the Chattanooga Medical College.

In the fall of 1910 he obtained the apartment building at 700 McCallie Avenue, which he opened as Highland Sanitarium, and operated it for some time.

On October 15, 1885, Dr. Bogart was married to Loretta J. Magill. They had two children, Mrs. Elizabeth Bogart Olney of New Orleans and Frank Magill Bogart of Chattanooga, Tennessee. His brother, Dr. W. M. Bogart, died two years ago. His nephew is Dr. Franklin B. Bogart of this city.

Dr. Bogart was an honest, conscientious, Christian gentleman and loyal to his patients and most reasonable in his charges. His practice was almost limited to obstetrics and he was an indomitable worker. He was a member of the First Presbyterian Church of this city. His death will be a great loss to the community.

Be It Therefore Resolved, That the Chattanooga and Hamilton County Medical Society deeply deplore the passing of Dr. Bogart, and

Be It Further Resolved, That we extend to his bereaved family our sincere sympathy and condolence,

And Be It Further Resolved, That a copy of this preamble and these resolutions be sent to the family of the deceased, a copy spread upon our record book, and a copy sent to the secretary of the State Medical Society.

J. W. BRADLEY, M.D., *Chmn.*

H. P. LARIMORE, M.D.

J. B. MCGHEE, M.D.

W. E. ANDERSON, M.D.

E. S. BLAIR, M.D.

Memorial Committee.

Approved August 6, 1936.

D. N. WILLIAMS, *President.*

J. MARSH FRERE, M.D., *Secretary.*

In the sudden death of Dr. A. N. Gor-

don at his home in Midland on August 2, 1936, the Rutherford County and Stones River Academy of Medicine lost one of its most valued members. He was a charter member and past president of the society and served it always with credit and distinction. He graduated from the University of Nashville in 1905 and practiced his profession in the Midland and Fosterville vicinity since that time.

He married Miss Sarah Holden and reared and educated four children; was an exemplary citizen and neighbor; and the vacancy he has left will be hard to fill.

Be It Therefore Resolved, That the Rutherford County and Stones River Academy of Medicine deeply deplore the passing of Dr. Gordon.

And Be It Further Resolved, That we extend to his bereaved family our sincere sympathy and condolence.

Be It Further Resolved, That a copy of this preamble and these resolutions be sent to his family and a copy be sent to the secretary of the State Society.

J. R. GOTT,

W. T. ROBISON,

J. D. HALL,

Committee.

NEWS NOTES AND COMMENTS

State and federal experts addressed a fair representation of County Council of Parents and Teachers, several local physicians, and others at Covington on the subject of "Social Hygiene."

Johnson City physicians are backing the Kiwanis Club in its effort to reduce useless noise.

District Health Unit No. 2 has been opened by joining five counties—Fentress, Clay, Jackson, Pickett, and Putnam. Dr. H. M. Kelso is in charge, with headquarters at Livingston.

Dr. Horton G. DuBard has opened his office at Norris.

Following a diphtheria death, the Johnson City health unit has been very busy giving immunizations.

Mrs. Stephenson, mother of Dr. C. V. Stephenson, Centerville, died September 28 in her ninety-third year.

Our records here show that on September 30, 1936, our membership is the same as it was on October 30, 1935, the figure on both dates being 1,536.

This means that the secretaries of county societies have worked harder this year in building up their enrollment of the societies.

At the present time we have twenty-nine members fewer than the total of 1935.

We feel sure that this year's enrollment will exceed last year by a satisfactory number.

WOMAN'S AUXILIARY

President-----Mrs. Theodore Morford
Nashville
President-elect-----Mrs. W. T. Black
Memphis
Press and Publicity-----Mrs. Oscar Nelson
Nashville

Every day is doctor's day with the members of the Woman's Auxiliary to the State Medical Association, but at the last state convention the Tennessee State Auxiliary recommended a special and official "Doctors' Day" with a capital D, when the doctors should be asked to join with the auxiliary members in some occasion which would promote better acquaintance and good fellowship. Doubtless most of the local auxiliaries carried out this program, but unfortunately reports have not yet reached your press and publicity chairman, and so cannot be included in this informal monthly chat about our doings. And this gives me the opportunity of asking the press and publicity chairmen all over the state to try, please, to have your notices in the hands of the state press and publicity chairman by the first of each month, as copy for the JOURNAL must be handed in on the fifth.

The Woman's Auxiliary to the Nashville Academy of Medicine and Davidson County Medical Society had a most delightful "Doctors' Day" get-together in the form of a supper and informal dance at Hettie Ray's Supper Club on Monday, June 22. Mrs. J. D. Lester was general chairman and planned a most successful meeting. Fifty couples shared the good time and I believe enjoyed it so much that they will want to see it become an annual affair.

Work for the year is beginning and we would like to share with each other our plans and accomplishments as well as the social events which are such a pleasant part of our auxiliary life. If your local auxiliary has a regular time and place of meeting it might be reported through this column so that a visiting auxiliary member in your city might have the opportunity and privilege of meeting with you. If you have suggestions for activities or for the things you would like to have reported or discussed in this column your press and publicity chairman will be most happy to hear from you. Remember, the news for the JOURNAL must come from your local auxiliary chairmen and this column is yours. Help us to make it interesting and worth while.

MEDICAL SOCIETIES

Davidson County:

September 22—"Secondary Perineorrhaphy at Time of Subsequent Delivery," by Dr. Hamilton Gayden. Discussion opened by Drs. Lucien Caldwell and Lucius E. Burch.

September 29—"Oleothorax," by Dr. Kirby Howlett, Jr.

October 6—"Embolism of the Abdominal Aorta," by Dr. C. M. Miller. Discussion opened by Drs. M. B. Davis and Herman Spitz.

Dyer, Lake, and Crockett Counties:

Dyer, Lake, and Crockett Counties Medical Society met in regular monthly session Wednesday, October 7.

Scientific program:

"Procto-colitis as I Have Seen It for Thirty Years," Dr. John L. Jelks, Memphis.

"Endometriosis," Dr. Gus Crisler, Jr., Memphis.

"Diagnosis of Angina Pectoris," Dr. Whitman Roland, Memphis.

A splendid program—thirty present.

C. L. DENTON, *Secretary*.

Hamilton County:

October 22—"Intestinal Obstruction," by Dr. Wm. J. Sheridan. "Dislocation of the Shoulder," by Dr. J. F. Hobbs.

October 29—"Fractures of the Hip; Treatment by Internal Fixation," by Dr. Robt. C. Robertson.

November 5—"The Status of Immunization in Pediatrics," by Dr. John W. Hocker. "Maxillary Sinusitis," by Dr. S. H. Long.

November 12—"Common Duct Obstruction," by Dr. J. A. Steward.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

The Five-County Medical Society met August 25 at Centerville. The scientific program consisted of five papers as follows:

"Infantile Paralysis," by Dr. J. O. Manner, Nashville, and Dr. John M. Lee, Nashville. Discussion was opened by Dr. R. W. Billington, Nashville, and Dr. Robert Brown, Nashville.

"Ununited Fractures," by Dr. Willis C. Campbell, Memphis. Discussion opened by Dr. Hugh Smith, Memphis, and Dr. W. E. Boyce, Flatwoods.

"Surgery of Pulmonary Tuberculosis," by Dr. M. B. Davis, Nashville. Discussion opened by Dr. L. W. Edwards, Nashville.

"Surgery of the Sympathetic Nervous System," by Dr. T. D. McKinney, Nashville. Discussion opened by Dr. J. H. Tilley, Lawrenceburg.

"The Relation of Erosion of the Uterine Cervix to Cancer of the Cervix," by Dr. W. C. Dixon, Nashville.

The sixth number on the program was a barbecue luncheon at 12:30 at the home of Dr. and Mrs. C. V. Stephenson. The papers were greatly enjoyed and the luncheon was literally devoured. In addition to the membership of the Five-County Society, all the Hickman County doctors were present, nor were those present limited to the six counties. Davidson, Shelby, and Maury sent delegations and the total count was sixty-five. A most hearty vote of thanks was given the good host and hostess. The memory of the day will long be with those present.

"Enclosed is a program of our meeting held on September 29, which was a very good one indeed. This program was rendered exactly as shown.

"Compensation (Industrial) in General Practice," by Dr. Dexter L. Woods, Waynesboro. Discussion opened by Drs. J. V. Hughes, Savannah, and C. C. Hardison, Iron City.

"Radium and Its Uses," by Dr. Jere L. Crook, Jackson. Discussion opened by Drs. Leo Harris and V. H. Crowder, Lawrenceburg.

"A New Conception in the Treatment of Senile Vaginitis," by Dr. John W. Simpson, Nashville. Discussion opened by Drs. J. W. Frost, Linden, and Paul Wylie, Hohenwald.

"Hemophilia," by Dr. W. E. Boyce, Flatwoods. Discussion opened by Drs. T. J. Stockard, Lawrenceburg, and J. T. Keeton, Clifton.

O. H. WILLIAMS, *Secretary*.

Washington County:

October 1—"Residuals of 'Jake-leg' Paralysis After Five Years" (demonstrated by motion pictures), by Dr. W. M. Bevis. Discussion by Drs. Brading and Creech.

"Etiology of Defective Hearing and Deafness. Part II," by Dr. N. E. Hartsook. Discussion by Drs. Campbell and Poole.

COMMITTEES

The following is a list of the standing committees of the Tennessee State Medical Association provided for in the constitution and by-laws and appointed by the proper authority, together with some special committees appointed under the authority of a resolution by the House of Delegates.

Some of the committees are appointed for a definite period. In such instances the appointment of the committeeman expires with the meeting of the House of Delegates in the year stated opposite his name.

COMMITTEE ON SCIENTIFIC WORK

H. H. Shoulders, Chairman, Nashville.
A. F. Cooper, Memphis.
Frank Harris, Chattanooga.
A. H. Lancaster, Knoxville.

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L. W. Edwards, Chairman, Nashville (1939).
E. W. Cocke, Bolivar (1941).
Battle Malone, Memphis (1940).
Tom Barry, Knoxville (1938).
T. R. Ray, Shelbyville (1937).

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W. P. Wood, Knoxville (1940).
Hiram A. Laws, Chattanooga (1939).
Tom Mitchell, Memphis (1938).
J. L. Raulston, Knoxville (1937).

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HOSPITAL COMMITTEE

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ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

Dr. W. P. Wood, Chairman, Knoxville.
Dr. W. M. Searight, Memphis.
Dr. L. W. Edwards, Nashville.

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(Representing the Tennessee State Medical Association)

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O. S. Warr, Memphis.
F. B. Bogart, Chattanooga.
J. O. Manier, Nashville.

COMMITTEE ON EDUCATION

O. S. Warr, Chairman, Memphis (1938).
R. B. Wood, Knoxville (1938).
W. G. Kennon, Nashville (1937).
J. Marsh Frere, Chattanooga (1937).
W. O. Baird, Henderson (1939).
J. M. Lee, Nashville (1939).

The following committees are expected to serve under the supervision of the Committee on Education:

(A) COMMITTEE ON MATERNAL WELFARE

J. R. Reinberger, Chairman, Memphis.
M. S. Lewis, Nashville.
H. B. Hewitt, Chattanooga.
Andrew Smith, Knoxville.

(B) COMMITTEE ON CHILD WELFARE

W. D. Anderson, Chairman, Chattanooga.
Oliver Hill, Knoxville.
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(C) CANCER COMMITTEE

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J. W. McClaran, Jackson.
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Vice President for Middle Tennessee—Dr. J. O. Walker, Franklin.

Vice President for East Tennessee—Dr. Lee K. Gibson, Johnson City.

Secretary—Editor—Dr. H. H. Shoulders.

Assistant Secretary—Editor—Dr. W. M. Hardy.

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Dr. A. F. Cooper, Goodwyn Institute Building, Memphis.

Dr. E. R. Zemp, Walnut Street, Knoxville.

Dr. Franklin B. Bogart, Medical Arts Building, Chattanooga.

Dr. John B. Steele, Volunteer Building, Chattanooga.

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Third District—Dr. Hiram A. Laws, Jr., Chattanooga.

Fourth District—Dr. J. T. Moore, Algood.

Fifth District—Dr. John W. Sutton, Petersburg.

Sixth District—Dr. L. W. Edwards, Nashville.

Seventh District—Dr. C. D. Walton, Mt. Pleasant.

Eighth District—Dr. J. R. Thompson, Jackson.

Ninth District—Dr. E. H. Baird, Dyersburg.

Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—

Dr. E. G. Wood, Knoxville; East Tennessee.

Dr. H. H. Shoulders, Nashville; Middle Tennessee.

Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—

Dr. E. T. Newell, Chattanooga; East Tennessee.

Dr. J. O. Manier, Nashville; Middle Tennessee.

Dr. E. C. Ellett, Memphis; West Tennessee.

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Carroll	E. W. Hillsman, Trezevant		J. H. Williams, McKenzie
Carter	E. T. Pearson, Elizabethton	J. B. Shoun, Elizabethton	E. L. Caudell, Elizabethton
Chester, Henderson, and Decatur	C. H. Johnson, Lexington	J. L. McMillen, Decaturville	L. C. Smith, Henderson
Cocke	Drew A. Mims, Newport	Chas. Ruble, Newport	J. E. Hampton, Newport
Cumberland	E. W. Mitchell, Crossville		V. L. Lewis, Crossville
Davidson	H. S. Shoulders, Nashville	H. L. Douglas, Nashville	J. P. Gilbert, Nashville
Dickson	L. F. Loggins, Charlotte		R. P. Beasley, Dickson
Dyer, Lake, Crockett	R. C. Newkirk, Tiptonville	John E. Frazier, Newbern (Dyer)	C. L. Denton, Dyersburg
Fayette-Hardeman	L. D. McAuley, Oakland	Leon Pope, Grand Junction	A. Richards, Bolivar
Fentress	C. A. Collins, Wilder	A. H. Crouch, Forbus	J. P. Sloan, Jamestown
Franklin	W. F. Smith, Decherd	A. P. Smith, Winchester	John M. Hardy, Sewanee
Gibson	L. H. Montgomery, Trenton	H. P. Clemmer, Milan	F. L. Roberts, Trenton
Giles	R. E. Warren, Pulaski	J. G. Waldrop, Lewisburg	Roscoe Faulkner, Ass't Sec., Trenton
Greene	N. H. Crews, Greeneville	R. S. Cowles, Greeneville	T. F. Booth, Pulaski
Grundy	U. B. Bowden, Pelham	O. H. Clements, Palmer	C. P. Fox, Jr., Greeneville
Hamblen	P. L. Brock, Morristown	W. E. Howell, Morristown	T. F. Taylor, Monteagle
Hamilton	D. M. Williams, Chattanooga	E. A. Gilbert, Chattanooga	J. F. Campbell, Morristown
Hardin, Lawrence, Lewis, Perry, and Wayne	W. E. Boyce, Flatwoods	J. H. Taylor, Morris Chapel (Hardin)	J. Marsh Frere, Chattanooga
		J. W. Danley, Lawrenceburg (Lawrence)	O. H. Williams, Savannah
		Paul Wiley, Hohenwald (Lewis)	
		W. E. Turner, Lobelville (Perry)	
		D. L. Woods, Waynesboro (Wayne)	
Haywood	A. H. Sorrell, Brownsville	John C. Thornton, Brownsville	Roy M. Lanier, Brownsville
Henry	A. F. Paschall, Puryear	Elroy Scruggs, Paris	R. Graham Fish, Paris
Hickman	L. F. Pritchard, Only	C. V. Stephenson, Centerville	W. K. Edwards, Centerville
Humphreys			W. W. Slayden, Waverly
Jackson	J. D. Quarles, Whiteville	R. C. Gaw, Gainesboro	F. B. Clark, Gainesboro
Knox	M. S. Roberts, Knoxville	John R. Smoot, Knoxville	Jesse C. Hill, Knoxville
Lauderdale	Thos. F. Pipkin, Henning	J. H. Nunn, Ripley	Thos. E. Miller, Ripley
Lincoln	H. K. Alexander, Fayetteville	R. E. McCown, Fayetteville	M. F. Brown, Fayetteville
Macon	D. D. Houser, Lafayette	P. East, Lafayette	J. Y. Freeman, Lafayette
Madison	J. C. Pierce, Mercer	John E. Powers, Jackson	S. M. Herron, Jackson
Mauzy	D. B. Andrews, Columbia	O. C. Fowler, Spring Hill	C. D. Walton, Mt. Pleasant
		H. C. Busby, Columbia	
McMinn			David F. Seay, Englewood
McNairy	John R. Smith, Selmer	G. B. Curry, Selmer	H. C. Sanders, Selmer
Monroe	T. M. Roberts, Sweetwater	J. A. Hardin, Sweetwater	W. J. Cameron, Sweetwater
Montgomery	F. A. Martin, Cumberland City	R. M. Workman, Clarksville	Philip L. Lyle, Clarksville
Obion	W. B. Harrison, Union City	Har Glover, Union City	Frank B. Kimzey, Union City
Overton			A. B. Qualls, Livingston
Polk	W. Y. Gilliam, Copperhill	W. C. Strauss, Copperhill	F. O. Geisler, Isabella
Putnam	J. Fred Terry, Cookeville	W. A. Howard, Cookeville	Thurman Shipley, Cookeville
Roane	F. D. Owings, Rockwood	T. L. Bowman, Harriman	W. W. Hill, Harriman
Robertson	W. F. Fyke, Springfield	E. W. Adair, Springfield	W. S. Rude, Ridgetop
Rutherford	J. D. Hall, Readyville	B. W. Rawlins, Murfreesboro	J. A. Scott, Murfreesboro
Scott			D. M. Woodward, Winona
Sevier	R. J. Ingle, Sevierville	C. P. Wilson, Sevierville	R. C. Kash, Sevierville
Shelby	Robin F. Mason, Memphis	F. W. Smythe, Memphis	A. F. Cooper, Memphis, Secretary
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Sullivan and Johnson	W. H. Reed, Kingsport	D. D. Vance, Bristol (Sullivan)	T. R. Bowers, Bristol
		R. O. Glenn, Mountain City (Johnson)	
Sumner	C. D. Giles, Gallatin	L. A. Absher, Portland	Harold Kelso, Livingston
Tipton	A. J. Roby, Covington	L. J. Lindsey, Covington	H. C. Currie, Covington
Warren	John S. Harris, McMinnville	E. L. Mooneyham, Rock Island	John T. Mason, McMinnville
Washington	W. M. Bevis, Johnson City	J. L. Hankins, Johnson City	C. H. Long, Johnson City
Weakley	J. A. Moore, Sharon	G. C. Thomas, Greenfield	P. W. Wilson, Dresden
White	S. F. Gaines, Sparta	Vernon Hutton, Ravenscroft	A. F. Richards, Sparta
Williamson	R. H. Hutcheson, Franklin	Knox Galloway, Franklin	K. S. Howlett, Franklin
Wilson	L. L. Tilley, Lebanon	M. H. Wells, Watertown	R. B. Gaston, Lebanon

OTHER MEDICAL SOCIETIES

EAST TENNESSEE MEDICAL ASSOCIATION

The East Tennessee Medical Association met in Cleveland on October 6. A large attendance enjoyed the following program:

"Traumatic Loss of the Penis in Early Life with Case Reports," by Dr. D. N. Arnold, Cleveland. Discussionists, Dr. Raymond Wallace, Chattanooga, and Dr. Albert C. Broyles, Dayton.

"Acute Respiratory Diseases, Especially of the Lower Tract," by Dr. R. C. Kimbrough, Madisonville. Discussionists, Dr. Wiley R. Smith, Knoxville, and Dr. R. W. Epperson, Athens.

"Infections of the Mediastinum, with Case Reports," by Dr. C. O. Foree, Athens. Discussionists, Dr. T. B. Yancy, Kingsport, and Dr. J. M. Cox, Coal Creek.

"Injuries to the Urinary Tract," by Dr. Tom R. Barry, Knoxville. Discussionists, Dr. Joseph B. Killebrew, Chattanooga, and Dr. Wm. D. Padgett, Lenoir City.

"Irregularities of the Heart," by Dr. E. T. Brading, Johnson City. Discussionists, Dr. G. D. Lequire, Maryville, and Dr. W. J. Cameron, Sweetwater.

"The Splinting and Transportation of the Fractured Patient," by Dr. R. C. Robertson, Chattanooga. Discussionists, Dr. Troy P. Bagwell, Knoxville, and Dr. Thos. H. Phillips, Rockwood.

Presidential address: "Acute Intestinal Obstruction," by Dr. E. L. Caudill, Elizabethton.

"Coronary Occlusion," by Dr. W. C. Crowder, Maryville. Discussionists, Dr. John Roberts, Kingston, and Dr. W. S. Moore, Etowah.

"Diagnosis and Treatment of Goitre," by Dr. L. E. Coolidge, Greeneville. Discussionists, Dr. R. G. Waterhouse, Knoxville, and Dr. Carl T. Speck, Cleveland.

"Nontubercular Pulmonary Infections," by Dr. R. B. Wood, Knoxville. Discussionists, Dr. J. S. Lyons, Rogersville, and Dr. Wm. E. Howell, Morristown.

"Fractures and Dislocations of the Spinal Column, with Lantern Slides," by Dr. Ed-

ward T. Newell, Chattanooga. Discussionists, Dr. Robert F. Patterson, Knoxville, and Dr. A. J. Guinn, Ducktown.

"Treatment of Eclampsia," by Dr. Milton Smith Lewis, Nashville.

After-dinner address: Dr. C. C. Coleman, Richmond, Virginia. Subject, "General Observation on the Diagnosis and Treatment of Brain Tumors."

The Georgia Pediatric Society announces the program of the coming meeting to be held in Atlanta, December 10.

As in the past nationally-known speakers have been secured.

Members of the Tennessee State Medical Association are invited to be present.

For program write Dr. Don F. Cathcart, Secretary, 478 Peachtree Street, N. E., Atlanta, Georgia.

The Black Patch Medical Society held a meeting August 18 at the Idaho Springs Hotel, with Dr. R. S. Keats, president, presiding. Dr. J. W. Alford of Nashville was the first essayist, his subject being "Some Aspects of Gall Bladder Diseases." Dr. W. D. Haggard of Nashville discussed "Surgery of the Lower Intestinal Tract."

The next meeting of the Black Patch Medical Society will be held in Springfield, October 20.

COMING MEETINGS

American College of Surgeons, Philadelphia, October 19-23. Dr. George W. Crile, 40 East Erie Street, Chicago, chairman, Board of Regents.

American Public Health Association, New Orleans, October 20-23. Dr. Reginald M. Atwater, 50 West Fiftieth Street, New York, executive secretary.

American Society of Tropical Medicine, Baltimore, November 18-20. Dr. N. Paul Hudson, Department of Bacteriology, Ohio State University, Columbus, Ohio, secretary.

American Anesthetists of the United States and Canada, Philadelphia, October 19-23. Dr. F. H. McMechan, 318 Hotel Westlake, Rocky River, Ohio, secretary.

Association of American Medical Colleges, Atlanta, October 26-28. Dr. Fred C. Zapffe, 5 South Wabash Avenue, Chicago, secretary.

Association of Military Surgeons of the United States, Detroit, October 29-31. Dr. H. L. Gilchrist, Army Medical Museum, Washington, D. C., secretary.

Central Association of Obstetricians and Gynecologists, Detroit, October 15-17. Dr. Ralph A. Reis, 104 South Michigan Boulevard, Chicago, secretary.

Omaha Midwest Clinical Society, Omaha, October 26-30. Dr. J. D. McCarthy, 107 South Seventeenth Street, Omaha, secretary.

Southern Medical Association, Baltimore, November 17-20. Mr. C. P. Loran, Empire Building, Birmingham, Alabama, secretary.

Tri-States Medical Society of Texas, Louisiana, and Arkansas, Longview, Texas, October 26, 27. Dr. John M. Ellis, Mt. Pleasant, Texas, secretary.

Middle Tennessee Medical Association, Woodbury, November 12, 13. Dr. D. W. Smith, Nashville, secretary.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Cyclopropane: A New and Valuable Gas Anesthetic. L. F. Sise, New England Journal of Medicine, August 15, 1936.

The effects of higher concentrations of cyclopropane are astounding to those who think in terms of nitrous oxide and ethylene. The dangers in these gases are preceded by signs of anoxemia, while cyclopropane drastic overdoses occur in the presence of abundant oxygen. In high concentrations of cyclopropane successive stages of anesthesia cannot be recognized. Much preliminary narcotic medication is inadvisable. However, one of its advantages is the large amount of oxygen that can be used.

It was found in a series of cases that there were fewer respiratory complications, less nausea and emesis, but more cardiac damage than with other inhalation anesthetics. In conclusion the author states that cyclopropane is a hydrocarbon anesthetic gas of great power, giving adequate anesthesia in concentration of about fifteen per

cent. Its power and rapidity of action are of potential danger if it is carelessly used. In high concentrations it has a deleterious effect on the heart. Anesthetic mixtures are within the explosive range. Due to high percentages of oxygen that may be used it is of great value in chest surgery, respiratory obstruction and some other conditions. It is also of low toxicity.

DERMATOLOGY

By E. E. BROWN, M.D.
Doctors Building, Nashville

A Hitherto Undescribed Method of Treating Sebaceous Cysts. Samuel Feldman, M.D., New York, N. Y., Archives of Dermatology and Syphilology, September, 1936.

Uniform good results have been obtained over a five-year period as well as less scar formation than usually results from surgery. He recommends using an eighteen gauge needle attached to syringe and puncturing cyst (infected or sterile) at its most dependent position. Aspirate through needle or evacuate through needle puncture. If contents are too thick inject ninety-five per cent alcohol until cyst blanches and wait a few days until softening occurs; then aspirate or evacuate through needle puncture; wash out several times with alcohol until it returns clear. Put in horsehair drain and dress.

Repeat this procedure if necessary. When sac appears at opening enlarge if necessary and remove with forceps.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 316 Doctors Building, Nashville

Apiol Poisoning. Andre Patoir and Gerard Patoir, Paris Medical Journal, 97: 397, November 16, 1935.

Apiol is widely advertised as an emmenagogue and extensively used as an abortifacient. Recent observers have noted cases of polyneuritis and nephritis following the injection of this drug. A few years ago an epidemic of polyneuritis in the United States was traced to triorthocresyl phosphorous ester, a constituent of Jamaica rum. A similar sudden accumulation of cases of polyneuritis in Germany was traced to the extensive use of creosote phosphate in pulmonary affections. There is a striking similarity in the symptomatology and course of the patients with Apiol polyneuritis observed in France and the United States with those cases mentioned above. This is probably satisfactorily explained by the fact that triorthocresyl phosphorous has been discovered in the various Apiol preparations now on the market.

The first symptoms of intoxication appear in the legs, later involving the hands, proceeding to paralysis. Serious hepatonephritis will develop.

Abortion results not as a direct result of the Apiol, but as part of the general impairment of the patient through renal impairment and emaciation. The free sale of Apiol should be prohibited.

Cervicitis and Endocervicitis in Relation to Gynecologic Symptomatology. Howard J. Holloway, American Journal of Obstetrics and Gynecology, 32: 304, August, 1936.

Cervicitis and endocervicitis probably seem a very elementary problem, but when one constantly sees a number of patients presenting themselves for relief of various gynecologic complaints that have been advised to have major surgical procedures done for relief, one is inclined to stop and wonder if we are not frequently overlooking a very simple common cause of these complaints, namely lesions of the cervix.

Cervicitis is most often noted in women who have had one or more children with resulting lacerations of the cervix which permit access of bacteria to the cervical canal. Due to the anatomical construction of the cervix, infection once implanted on the cervical mucosa may endure for an indefinite period. Numerous symptoms may develop as a result of these infections, depending on the severity and extent of invasion. Leucorrhea is probably the most common symptom associated with burning, intense itching, smarting on urination and dyspareunia. Similar symptoms may be produced by a vaginitis as a result of various organisms, the most common, trichomonas vaginalis, streptococci, yeast and fungoid infections, all of which may have an associated cervical infection.

The cervix is richly supplied with lymphatics which combine with the lymphatics of the upper vagina and drain into the iliac glands. This may produce marked induration of the uterosacral ligaments, producing pain and backache in the lumbosacral region. This pain can be reproduced by pushing the cervix anteriorly, placing the uterosacral ligaments on a stretch.

Burning on urination, urgency, and bladder tenesmus are occasionally found to be relieved by clearing up cervical lesions. Whether these bladder symptoms are due to direct infection through the urethra or by lymphatic drainage is problematical.

There is some argument as to whether cervicitis and endocervicitis can act as a focus of infection. However, it is not inconceivable that some cervical infections may be related to general systemic or rheumatoid conditions.

Severe dysmenorrhea may be an associated symptom especially when an erosion is present.

Menorrhagia, not infrequently thought to be due to fibromyomata, may be the result of an inflammatory process secondary to cervicitis and endocervicitis.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

Simultaneous Closure of All the Central Retinal Vessels. M. B. Bender, Archives of Ophthalmology, September, 1936.

A woman, aged thirty-two, sensed swelling and numbness in the right side of the face an hour after the extraction of four teeth. The next day she had headache, diplopia, and transient blurring of vision. In the evening a physician found an infected pharynx and a temperature of 101 Fahrenheit, and made a diagnosis of influenza, of which there was an epidemic. The next day, thirty-six hours after the extraction of the teeth, the vision in the right eye was reduced to counting fingers at one foot (33 cm.) and that in the left eye to total blindness. Ophthalmoscopy revealed thrombosis of the central retinal vein in each eye. About six weeks later both nerve heads were white, with indistinct outlines, and there was complete absence of blood vessels in the fundus except for a few whitish streaks radiating from the nerve heads.

ORTHOPEDIC SURGERY

By ROBERT R. BROWN, M.D.
Nashville

Fractures of the Os Calcis. Richard O. Schofield, M.D., Sacramento, California, Bone and Joint Surgery, July, 1936.

Any discussion of fractures of the os calcis can be undertaken only by acknowledging that there exist two distinct schools of thought in regard to the best method of treatment of this disabling condition. It is only by weighing these fundamental differences that one can conclude that certain procedures and steps in the treatment will produce an end result which will give a maximum restoration of function. The work of Bohler represents the greatest single contribution ever made toward the care of these fractures, and, having been privileged to follow closely his work, it has seemed to the author that this closed method of treatment offers distinct advantages over the various open types of reduction and arthrodesis that are advocated by others. Accordingly, at Boulder Dam the principles of the Bohler regimen were instituted and carried out in all of our cases. All treatments were given in our own hospital at Boulder City. These compensable industrial injuries were followed from the time the accident occurred until there had been complete healing and the patient had returned to work. When further improvement could not be obtained and when the condition of the cases was stationary, they were submitted for disposition to the industrial commissions of the states of Nevada and Arizona, who then estimated the percentage of disability. This rating, therefore,

was made only when it had been established that the maximum restoration had been accomplished.

After stressing the value of first aid treatment in all fracture cases the author classifies the fractures of os calcis into four groups mainly as to the severity of deformity and outlines procedure necessary for best restoration of salient angle of articular surface of this bone.

The principles of the Bohler technique with use of skeletal traction, the compression clamp and screw traction frame are used. Liberal illustrations of apparatus and its application as well as numerous radiograms of types of fractures both before and after treatment are presented.

A total of fifty-two cases are included in this group and in view of usual poor functional results seen in fractures of the os calcis it is encouraging to note that Dr. Schofield reports the average loss of function in this group as being only twelve per cent.

Conclusions: The closed method of reduction of fractures of the os calcis has given us an exceedingly low functional foot loss.

After healing has occurred it is not uncommon to find that the architecture of the injured foot has been restored to an apparently normal condition, yet the patient may complain of varying degree of pain, particularly below the malleoli. Pain on the plantar weight-bearing surface of the tuberosity is seldom severe or persistent as that which is found laterally especially under external malleolus. The loss of motion in eversion and inversion constitutes the greatest type of residual disability.

Skeletal traction and extension separate the subastragaloid and the cuboid articular surfaces, and this procedure also restores the architecture which will permit the resumption of the normal mechanics in the foot for weight-bearing and locomotion.

The youth of patients as well as promptness of medical attention, together with early and complete reduction of these fractures, accounted for low residual disabilities obtained.

OTOLOGY, LARYNGOLOGY, RHINOLOGY

By W. W. POTTER, M.D.
Medical Building, Knoxville

The Treatment of Laryngeal Diphtheria: A Statistical Study of 655 Cases. John Eschenbrenner, *Annals of Otolaryngology, and Laryngology*, 45: 485.

This is an analysis of 655 successive cases of laryngeal diphtheria that have been observed and treated at Isolation Hospital, St. Louis, Missouri, from April, 1924, to April, 1935. Certain factors are found to influence incidence of the disease. First, age of the patient—eighty-four per cent were under seven years of age, ninety-five per cent were under nine years of age. Seasonal variation in the incident was quite marked. The peak number of cases occur during the months of February,

March, and April. Very few cases occur in August and September. Social status was an important factor. Most cases came from homes of poor hygienic conditions with which go ignorance, malnutrition, and neglect. Practically none of the patients had had previous immunization. Seventy-nine and one-half per cent of these cases were known to be sick at least three or more days and twenty-nine per cent had been sick seven or more days before medical care was sought. The important points in the treatment are antitoxin, nursing care, and medical care. The antitoxin was given in single doses of 20,000 units immediately upon entrance. This was all given intramuscularly unless the case was having much obstruction to respiration, then 2,000 units was given intravenously.

The author classifies the cases as primary and secondary, and the medical care consisted of the usual remedies. That is, a steam tent with tincture of benzoin, antispasmodics, expectorants, and sedatives. Some of these cases were incubated, some had tracheotomy, and some had both. The mortality rate in this group of cases seems to depend, as in every group, upon the early diagnosis and early administration of antitoxin.

PEDIATRICS

By JOHN M. LEE, M.D.
Doctors Building, Nashville

Acute Laryngotracheobronchitis. Chevalier Jackson, M.D., and Chevalier L. Jackson, M.D., Philadelphia, *Journal of American Medical Association*, September 19, 1936.

This condition occurs most often and most severely during epidemics of influenza. The influenza bacillus is found in three to five per cent of cases, while in more than ninety per cent of cases streptococci are primarily or secondarily the cause. The mortality in children under three years of age is about seventy per cent.

Laryngoscopic examination in life shows the mucosa of the larynx a deep red. The subglottic tissues are swollen and intensely red with patches of secretion that are easily removed, but no membrane or ulceration. In the trachea and bronchi the mucosa becomes in turn reddened, swollen, with a serous exudate which in turn becomes mucoid, then purulent and finally thick, tenacious and exceedingly difficult of expectoration. In infants this mechanical obstruction may prove fatal, literally drowning the child in his own secretions. In late stages of the disease the secretion may become thick and gumlike and later form crusts.

The laryngoscopic and bronchoscopic appearances found in diphtheritic infection and in laryngismus stridulus are given.

The symptomatology of this disease and practically all the clinical features are the same as those found in diphtheritic infection in the same location. These are detailed in a case report that

also outlines the treatment. There is no specific remedy for this condition. From a bronchoscopic study of these cases the author found the outstanding feature to be bronchial obstruction by inspissated secretion which the weak or absent cough reflex is unable to expel. Hence, he emphasizes the following points in treatment:

"(a) The routine administration of atropine and opium derivatives is illogical in theory and often fatal in practice.

"(b) The superheating of the air in our hospitals and dwellings contributes largely to inspissation of secretions. Outside air at zero contains little water even at the dew point. When we heat this air to seventy degrees Fahrenheit it becomes extremely desiccating to the secretions and almost caustic to the mucosa. The air surrounding the patient with laryngotracheobronchitis with inspissating secretions should be humid to saturation.

"(c) In this disease an impaired percussion note and increased respiratory rate usually mean not pneumonia or bronchopneumonia, but obstructive atelectasis.

"(d) These signs call for peroral or tracheotomy aspiration of secretions. In extreme cases forceps removal of crusts is the only means of saving life. Such potentially fatal circumstances can be prevented by humid air and the avoidance of atropine, opiates, and other desiccating medicaments."

ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.
Medical Arts Building, Chattanooga

The Treatment of Carcinoma of the Breast by Extirpation of the Tumor and Roentgen Irradiation. J. Borak, *Radiology*, Vol. 27, No. 1, July, 1936.

Reference is made to Hirsch of Berlin, who, in 1927, reported a series of twenty-two cases of carcinoma of the breast in which the tumor alone was removed surgically, followed by radium treatment. Of these twenty-two cases twenty-one were clinically well and symptom free at the end of three years and seventeen (17.7 per cent) at the end of five years.

Twenty-six cases are reported in which only the tumor was removed and followed by roentgen treatment. The object of the treatment was to remove surgically the palpable disease and depend on roentgen irradiation to take care of the microscopical malignancy. In those cases in which a tumor was palpated in the breast and the axilla seemed clinically free only the tumor in the breast was removed. The same procedure was followed when axillary glands smaller than a pea were palpated. If a large axillary tumor was present it was removed surgically.

Since the tumor was usually in the upper half of the breast, only two fields of roentgen treatment were used for such cases, one covering the area from the nipple to the anterior axillary line and including the upper half of the breast and the

second covering the axilla. In the exceptional case when the tumor was in the lower half of the breast the entire breast area was treated. The reason for this is that a local recurrence usually takes place in the operative scar or the immediate vicinity.

The results obtained have a direct relation to the dose of roentgen rays given. When the work was undertaken about ten years ago the cases received the same dose of irradiation that was given to cases on which a radical operation had been done. This amounted to 1,000r to 2,500r (an average of 2,000r) delivered over a period of approximately a year. Of eleven cases so treated metastasis took place in six instances. Another series of twelve cases was then treated in which the total dose ranged from 3,000r to 6,000r (usually 3,600r). In only one of these cases did metastasis take place.

The technique used at present consists in first treating the breast field, administering 300r daily for twelve days and beginning eight to fourteen days after operation. Immediately following this course (unless the skin reaction is too severe) the axillary field receives a similar course of treatment.

ABSTRACTOR'S NOTE: It should be remembered that this is a preliminary report, and while it is very encouraging, further reports from the larger medical centers should be published before it is put into general use.

It should be also remembered that most if not all of these cases would be classified in the group of early carcinoma which offers the most favorable prognosis. This group of cases yields a high percentage of cures when adequately treated by surgery alone or by a combination of surgery and irradiation.

SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.
1400 Monroe Avenue, Memphis

The Surgical Treatment of Sciatica. Henry W. Cave, M.D., New York City, *Surgical Clinics of North America*, June, 1936.

In this paper is presented a new surgical treatment for sciatic pain which was first performed by Frank R. Ober of Boston. Before any such treatment is carried out we must eliminate conditions such as arthritis, tuberculosis, osteomyelitis, and metastatic new growths of the spine and pelvic bones; diseases and new growths of the prostate, uterus, rectum, and ovary; also tumors of the spinal cord and of the sciatic nerve itself. Arthritis of the spine, foci of infection, and trauma are the usual causes of sciatic pain. The author briefly reviews the various treatments offered in this condition heretofore.

Pain, the chief symptom of true sciatic neuritis, may occur gradually or suddenly. In the erect posture the pain is less than when sitting. Most of the weight when standing is borne on the un-

affected side, thus lowering the pelvis on the affected side. There is tenderness over the distribution of the sciatic nerve. Lasequis sign is positive. When bending forward, severe pain is experienced unless the knees are flexed. To determine the presence of a contracted iliotibial band and taut fascia lata, Ober places the patient on a flat table on his unaffected side with the thigh slightly flexed. The affected leg is flexed to a right angle at the knee. With one hand steadying the pelvis and the other lightly holding the ankle, the leg is abducted widely and extended to a point where the thigh is in line with the body. In patients with contracted iliotibial bands, the leg will stand out in the abducted position and the band can be felt between the crest of the ilium and the anterior surface of the greater trochanter of the femur.

The rationale of the operation described is the release of the fascial pull exerted through the fascia lata and its attachments to the gluteus maximus muscle, thereby relieving the pressure on the sciatic nerve which lies beneath this muscle. The operation is performed under local anesthesia. The incision beginning just lateral to the anterior superior spine and passing downward and backward about one inch posterior to and one inch above the upper level of the greater trochanter. The fascia lata is exposed and the anterior fibers are divided just below and slightly in front of the anterior superior spine; proceeding posteriorly the iliotibial band and the fascia lata are incised, going well back and thoroughly dividing these structures over the anterior one and one-half inches of the gluteus, the separation in the incised band and fascia being about two inches wide. The patient should be up and about in a week.

The authors present results in six cases of his own, together with those of Dr. Farrell of New York and Dr. Ober, all of which show uniformly good results.

SYPHILOLOGY

By E. G. CLARK, M.D.

Tennessee Department of Public Health
Nashville

Mapharsen in the Treatment of Early Syphilis. Kulchar and Barnett, *American Journal of Syphilis, Gonorrhea, and Venereal Diseases*, 20: 482, September, 1936.

Arsenoxide, marketed under the name mapharsen, has been recently introduced into the treatment of syphilis on the theory that it is the active principle of the arsphenamines. During a period of twenty months, 1,270 injections of mapharsen were given to fifty-six patients with untreated primary or secondary syphilis. The treatment schedule consisted of courses of ten weekly injections of mapharsen alternating with courses of twelve injections of iodobismutol given twice a week in the first course and once a week in subsequent courses. Standard doses of mapharsen, sixty milligrams for men and forty milligrams for women,

were used. The dose of iodobismutol was two cubic centimeters.

In ten patients primary lesions healed in from four to thirty days, the mean being thirteen days. The time of involution of secondary syphilides in ten patients was the same. The interval corresponds to an average of two injections of mapharsen.

Of thirty patients with seropositive primary or secondary syphilis receiving one course of mapharsen, twenty-five, or eighty-seven per cent, remained seropositive. Eight of twenty-seven patients remained seropositive after two courses of mapharsen. At the end of the first course, four of nine seronegative primary cases became positive. All were negative at the end of the second course.

Six of twenty-one patients whose spinal fluid was examined after six months of regular treatment had definite positive changes in the fluid.

Patients were questioned specifically concerning all types of reactions. Pruritus, skin eruptions, and immediate reactions, including nitritoid, were more frequent in a similar group treated with neoarsphenamin. Nausea, vomiting, diarrhea, and headache were more common with mapharsen. Venous thrombosis occurred following one per cent of the 1,270 injections. None followed neoarsphenamin. A patient who had previously had exfoliative dermatitis following neoarsphenamin experienced a return of the dermatitis following one dose of mapharsen.

The authors are aware that the period of observation was too short and the number of patients too small for a complete clinical appraisal, but believe the small series indicates that serologic fastness and relapse, central nervous system involvement, and treatment reactions are not avoided in early syphilis by the use of mapharsen.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.

By G. A. WILLIAMSON, JR., M.D.
Medical Building, Knoxville

Some Observations on Female Urology with Special Reference to Ectopic Kidneys and Urethrography. William E. Stephens. Reprinted from *Journal of Urology*, Vol. 35, No. 2, February, 1936.

The proximity of the female generative and urinary tracts, and the frequency of associated or concurring pathology are often responsible for confusion in diagnosis, and sometimes for errors in treatment. In a review of 425 histories of female patients, together with 1,052 additional cases studied, the principal etiologic factor was found in the urinary organs in approximately 75.4 per cent, the generative organs in 24.5 per cent, and other organs in 0.1 per cent.

The most common lesions of the female urinary tract were urethritis, strictures of the urethra, cystitis, cystoceles, urethroceles, pyelonephritis, and hydronephrosis. The conditions most fre-

quently responsible for mistakes in diagnosis were ectopic pelvic kidneys, ureteral calculi, ureteral and urethral strictures. The principal symptoms were frequent urination, relative incontinence of urine, local and referred pain, burning and dysuria.

The most common lesions of the generative organs responsible for urinary symptoms were cervicitis, salpingitis, parametritis, ovarian cysts, and fibroid or other tumors of the uterus.

The clinical symptoms of pain in the lower abdomen or in the pelvis are most frequently found in women, although the incidence in male and female is about equal. He gives six cases which are especially interesting from the standpoint of differential diagnosis. The symptoms varied, being frequency of urination, pain in lower abdomen, nausea and vomiting, backache, vaginal discharge, and chills and fever. Masses could be palpated in four of the six cases. Provisional diagnoses were fibroid uterus, appendicitis, inflammatory pelvic disease, calcified hemorrhage or a dermoid cyst, abscess adherent to the uterus, and ruptured appendix. The final diagnoses were bilateral ectopic kidneys, crossed ectopia of the left kidney, right and left ectopic kidneys, hydronephrotic ectopic right kidney, and a horseshoe kidney.

He gives two cases where cystograms were used in determining the diagnosis, showing the importance of this procedure in lesions with bladder symptoms.

Inflammation around the uterus is a frequent result of traumatism during labor, and is often

responsible for scar tissue and adhesions which constrict or obstruct the bladder and ureter. Operations in repairing cystoceles or vesicovaginal fistulas are likewise responsible for this at times.

In 425 patients with urinary disturbances, urethral lesions were found in 328. Urethritis and strictures comprised the majority of these cases. He mentions that it is not generally appreciated that both congenital and acquired urethral strictures and nonspecific urethritis are common in women.

The writer noticed the frequency with which improvement often followed a single cystoscopy, and determined to calibrate the urethra of every female patient with symptoms suggestive of urinary tract pathology. Contrary to textbooks, a stricture of the female urethra is a common condition. He believes that a urethra below F. 26 is very often responsible for symptoms and pathology such as persistent chronic infection in both the urethra and upper urinary tract.

He states that urethrography is a valuable diagnostic procedure, and is frequently indicated in the presence of symptoms suggestive of urinary tract pathology in this sex. They use five cubic centimeters of twenty-five per cent lipoidal solution injected through a syringe to which a rubber tip has been attached satisfactory for anteroposterior and oblique views. The slight resistance found in the narrowest portion of the urethra where it passes the urogenital diaphragm should not be mistaken for a stricture.

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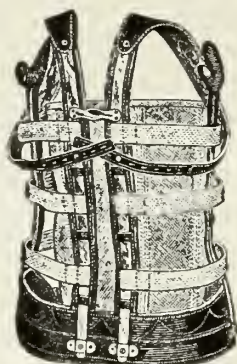
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SYMPTOMS OF PERFORATED PEPTIC ULCER*

EDWARD D. MITCHELL, JR., A.B., M.D., F.A.C.S.,** Memphis

WHEN ONE SPEAKS of a perforated peptic ulcer there immediately passes across our field of consciousness the picture so indelibly imprinted on memory's page that it shall never be forgotten. It is the picture of a patient lying motionless with an expression of anguish on his countenance, who looks appealingly at you for relief of this intense suffering. The skin is cold and clammy and the pulse is weak and may be slow or fast in the early stages. The breathing is rapid and shallow and thoracic, the abdomen remaining motionless. The knees are usually flexed to relieve as much as possible the tension on the abdominal muscles. The abdomen is found to be scaphoid in shape with its wall as hard as a marble table top. He objects to your palpation for there is exquisite tenderness which is more marked in the epigastric region. On listening for intestinal sounds one finds that the usual tinkle has been replaced by sinister silence. The tableau is that of one extremely ill. On questioning you find that for a period of years he has suffered from indigestion and epigastric pain coming on at a particular time after partaking of such delicacies as are known to the culinary art, and relieved by food or soda or vomiting. He is usually symptomless during the

summer and winter. After a bountiful repast or while performing hard manual labor he is suddenly seized with excruciating epigastric pain that causes him to fall if in the upright position and perhaps faint or awakens him if asleep. You are immediately called, quickly respond, and are surprised to find such a desperately ill patient in so short a lapse of time.

This is the typical picture portrayed by the textbooks and the one that is expected when a perforated peptic ulcer is considered. It is the picture that is found when the ulcer suddenly passes through the coats of the viscus in a place unprotected by surrounding organs. The contents from this perforated region rapidly pass throughout the entire peritoneal cavity causing a vicious peritonitis and the monstrous symptoms.

If seen a few hours later the shock of the disaster will have subsided. The skin will be warm, the temperature will have risen and the pulse will have increased in rate. The point of maximum tenderness may have changed and the possibility of other pathological entities may now enter giving us a new color to our picture.

It is unfortunate that all cases do not give such definite histories for then recognition could be prompt and accurate and by avoiding delay the outcome would be happier. At times the symptoms are so bizarre that accurate diagnosis is impossible. In a study of fifty cases only twenty-

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**From the Department of Surgery, College of Medicine, University of Tennessee.

nine gave a positive previous ulcer history and only thirty-one were typical of perforation. Twenty-one had either vague gastrointestinal symptoms or complete absence of symptoms of any kind prior to perforation. Nineteen had atypical symptoms of perforation. Thus we see that only fifty-eight per cent had a previous ulcer history and only sixty-two per cent of the fifty cases were typical of perforation. Therefore if we fail to appreciate the atypical symptoms we are courting dire disaster.

These variations are due to the position and number of the ulcers present and the rapidity with which perforation progresses. In some cases, however, correct diagnosis is impossible but at least a surgical emergency should be recognized and immediate operation advised.

Acute appendicitis is the most usual mistaken diagnosis for the contaminating material has passed along the inner side of the ascending colon to be collected in the region of the cecum. There may be no previous ulcer history and with the pain beginning in the umbilical region and shifting to the right lower quadrant such a diagnosis is warranted but on opening the abdomen the nature of the foreign material possibly containing undigested food particles will reveal the truth. An acutely inflamed appendix may also be present but this is generally a periappendicitis rather than an inflammatory involvement of all the coats of this vestigial remains. Such a case was encountered in a young man of twenty-two years who for nineteen hours complained of sharp constant umbilical pain that later shifted into the right lower quadrant. He took salts, became nauseated, and vomited once. There was one bowel movement. He had had a cough for two or three days. There was no ulcer history and the past history was irrelevant. Physical examination revealed a few scattered rales in the chest. The abdomen was rigid throughout. There was tenderness throughout but most marked over McBurney's point. Rebound tenderness was present. Peristalsis was absent. The temperature was 100, pulse ninety, and respiration twenty. The blood pressure was 118/65. The blood count

showed 18,600 white blood cells with ninety-four per cent polymorphonuclears. A diagnosis of acute appendicitis was made and immediate operation carried out. The vessels of the appendix were dilated and engorged and there was some roughening of the serosa. An ulcer perforated on the anterosuperior aspect of the first part of the duodenum was found which had become adherent to the undersurface of the liver. There was a small collection of duodenal contents in the cecal fossa and pelvis. This was a small perforation and only moderate soiling of the peritoneum had occurred, hence the lack of overwhelming symptoms.

Mother Nature is kind and when given a chance will partially or completely block the egress of material through the abnormal opening. It is from these slow perforations that we meet with the kaleidoscopic pictures that are so baffling to the best diagnostic acumen. There is no shock and no general peritonitis and the presenting signs will depend on the tissues that have come to the rescue and impede the passage of the irritating material into the peritoneal cavity. Only recently a patient from a near-by city was referred to me who had no history of a previous gastrointestinal dysfunction of any nature, except last summer when he had an attack of vomiting without pain that lasted several days. There had been no illness since childhood save the passage of several kidney stones from the right kidney eight years ago and an attack of right renal colic on three successive days one week before perforation. About 5 P.M. he was seized with a sudden rather severe pain in the right upper quadrant of the abdomen that rapidly became unbearable. He was slightly relieved by vomiting which took place once. He was not relieved by one-half grain of morphine. The following morning the attending physician thought the patient had a very acute appendicitis. At noon when I saw him the pain had subsided considerably. Examination was negative except for rigidity, a mass and marked tenderness over the gall bladder region. The temperature was 100 and the white count 16,000 with eighty-seven per cent polymorphonuclears. I thought we were dealing

with an empyema of the gall bladder and operated that afternoon. I was somewhat surprised to find a normal gall bladder and in its stead an ulcer on the posterior aspect of the second part of the duodenum that had perforated and been sealed by the base of the gall bladder, a rather rare condition, hence, the symptomatology this case presented. It must be borne in mind that the appendix often lies high and may give a picture similar to this one. The appendix was removed in this case and found chronically diseased. I had another case a short time ago with an almost identical history with the exception that several years previously he had undergone an operation for the removal of stones from the left kidney. At the time of my operation there was found a large perforation on the lesser curvature of the stomach in the proximal third that was becoming walled off by the under-surface of the diaphragm.

I remember quite vividly a patient who had been admitted to the hospital. After eating a hearty supper he went to bed apparently well. About two hours later he was awakened from a sound sleep with severe epigastric pain, soon to be followed by nausea and vomiting. On examination there was tenderness throughout the abdomen most marked in the epigastric area where rigidity was beginning to manifest itself. There was a small area in the lower lobe of the left lung anteriorly that was suggestive of beginning consolidation. This finding was very indefinite. There was much question as to whether this was a case of pneumonia or perforation of an ulcer since there was a previous ulcer history. It was finally decided to delay any radical procedures until the following morning. Examination at that time revealed a full-blown lobar pneumonia. Referred pain from the chest to the abdomen must always be borne in mind.

A thirty-eight-year-old man was brought into the hospital in a moribund condition. The history obtained from relatives was suggestive of ulcer over a ten-year period but for the past twenty-four hours was typical of angina pectoris. The patient was comatose, pulseless and no blood pres-

sure could be recorded. The temperature was 95.6. There were rales in both lungs. The abdomen was tender throughout with some rigidity. An admitting diagnosis of coronary disease or perforated peptic ulcer with question marks were recorded on the chart. He died two hours later. A post mortem study revealed a perforated ulcer on the posterior inferior aspect of the first part of the duodenum with general peritonitis.

These cases are sufficient to illustrate some of the common conditions that are often simulated by these perforated peptic ulcers. Less frequently one might be baffled by a perforated gall bladder, intestinal obstruction, acute pancreatitis, mesenteric thrombosis or ectopic pregnancy. It is not always easy to diagnose correctly but usually the pathology lies within the abdomen and surgical procedures, in any event, would be the proper treatment.

Hemorrhage is occasionally encountered with a perforated ulcer. Eliason and Ebeling reported four cases in seventy-four perforated cases and I encountered it three times in this series of fifty cases. Thus frank hemorrhage does not rule out perforation.

The X-ray is sometimes of value in deciding upon the diagnosis. A flat plate of the abdomen taken with the patient in the upright position may reveal air in the peritoneal cavity. When this is found it is pathognomic of a ruptured viscus. No free air does not rule out perforation. Free air in the peritoneal cavity was positive in seven cases, negative in five and not recording in thirty-eight of the fifty cases studied. Eliason and Ebeling found air positive in four of eleven cases, Mattingly in eight of thirteen and Vaughan and Singer in fifty-four of sixty-three cases. The large frank perforations will invariably give positive X-ray findings but the small leaks that are rapidly sealed may give no positive information.

The electrocardiogram is at times of value in diagnosing the occasional case of disease of the coronary artery of the heart but too much stress should not be placed on early negative findings. The electrocardio-

graphic tracing can be made while the operating room is being made ready and a reading obtained. No time is lost and the patient is not inconvenienced.

Blood studies are of limited value and are not characteristic in their findings. The white count may vary from normal to 20,000 or more. The chlorides, CO_2 , urea and sugar are not changed but may suggest some other condition. The icteric index and Van den Berg are not changed unless there is a biliary tract involvement. Little hope for aid of a positive nature in arriving at a diagnosis should be expected from the test tube.

My purpose in presenting this subject for your consideration is to recall to your attention that perforated peptic ulcers frequently give symptoms and physical findings far different from those described in textbooks. If we only diagnose those cases with the typical history and boardlike rigidity of the abdomen we will miss thirty-eight per cent of perforated ulcers. The symptoms depend on the size of the perforation, the rapidity with which it takes place and the surrounding structures that become

involved. The symptoms of the acute perforations are usually evident, the subacute are bizarre and the chronic perforations are symptomless. The symptoms arising from chronic perforations are due to complications as abscesses under the diaphragm, in the liver or pancreas or in the pleural cavity, adhesions, obstructions or inflammation of other structures. The one important point, except in the chronic perforations, is to know that there is an intra-abdominal emergency that requires immediate attention and that an exact diagnosis can be made after the abdomen has been opened. Only by early operation can the mortality rate of this dreadful calamity be reduced from its present heights.

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CESAREAN SECTION*

LUCIUS E. BURCH, M.D., F.A.C.S.,** Nashville

CESAREAN SECTION is the removal of a child through an incision in the abdominal wall and uterus. Julius Caesar was not delivered in this way. Caesones (children delivered by section from their dead mothers) were known long before Caesar's time. Caesar, however, was not a caesone as his mother was alive at the time of his wars as is proved by his letters to her.

Cesarean section was not performed on the living woman in Rome at the time of Caesar. The term is probably derived from the Latin, "partus caesareus." The removal of a child from a dead woman goes far back in history. The Lex Regia of Numa Pompilius, 715 B.C., commanded the removal of child before the burial of the mother. How long Cesarean section has been carried out on the living woman is not known. It is a matter of history, however, that the laws of the Jews, 140 B.C., considered the rights of twins delivered by section.

In 1879 Felkin, in the heart of Uganda, witnessed a Cesarean section performed by a native. The operator washed his hands and the field of operation with banana wine and the patient was made drunk on the same. A quick incision opened the uterus and, after the removal of the placenta, the cervix was dilated from above, the uterus massaged and compressed, the peritoneal cavity cleansed by raising the patient, and the abdomen closed by pins and a figure of eight suture, the wound being dressed with a paste of crushed herbs. Evidently these savages must have been carrying out this operation for many centuries.

The first authentic report of Cesarean section was made by Trautman, of Wittenberg, in 1610. The mortality of these early operations was something frightful, due to

the fact that no sutures were placed in the uterus.

Tarnier stated that up to his time in the nineteenth century not a successful case of Cesarean section had been performed in Paris.

In 1877 Porro, of Pavia, advised the supravaginal amputation of the uterus after the child was delivered in order to avoid the dangers of hemorrhage and infection from the leaking lochia, and for a short time this operation replaced Cesarean section.

Sanger in 1882 laid the foundation for the modern Cesarean section by strict asepsis and the use of sutures in the uterine incision.

The average mortality at the present time is almost ten per cent. This is due to a poor selection of cases and the lack of obstetrical training.

The Chicago Lying-In Hospital reports 500 cases with a mortality of one per cent. All of these cases except thirty-nine were carried out by the low technique. Of the thirty-nine, thirty were Porros, one vaginal, and eight classical.

Bowers, of Dayton, Ohio,¹ reports a mortality of 4.5 per cent in 243 cases. In this number there were no deaths from the low Cesarean section. A study of this mortality shows that there was a 33.3 per cent mortality in those that had spinal anesthesia; 4.1 per cent ethylene; 2.6 per cent nitrous oxide; and 4.8 per cent ether. In the best clinics in this country, where cases are properly selected, the mortality will run from one to two per cent. This is mentioned for the purpose of emphasizing the fact that Cesarean section even in the best of hands is a dangerous operation and should not be used as a panacea for all obstetrical complications. Cesarean section under the best of conditions has a blood loss of 500 cubic centimeters. Pastore² states that the average blood loss in labor cases runs to 257 cubic centimeters.

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**From the Department of Obstetrics and Gynecology, Vanderbilt University Medical School, Nashville.

Dieckman and Daily³ say that the average loss of blood in a spontaneous delivery is 107 cubic centimeters, delivery by forceps and episiotomy 342 cubic centimeters, Cesarean section 539 cubic centimeters. This blood loss in Cesarean section naturally reduces the resistance of the patient.

INDICATIONS

Indications are divided into absolute and relative. An absolute indication exists when the parturient canal is narrowed to the point that the child cannot be delivered, even by a mutilating operation. A conjugata vera of six to six and one-half centimeters is an absolute indication. Narrowing of passages from bony exostoses, irremovable tumors blocking the pelvis, stenosis of the cervix and vagina are absolute conditions.

Relative indications cover a broad field, and it is here that obstetrical training and experience are of great value. The conjugata vera of six and one-half to nine centimeters offers a relative indication depending on the size of the head of the child. It is here that a trial labor may be permissible, followed by a low Cesarean section if unsuccessful. Prolapse of the cord with a contracted and rigid cervix may be considered a relative indication. Abnormal presentations do not offer an indication unless complicated with a large child, contracted pelvis, rigid soft parts, or an aged primiparity. Placenta praevia centralis and abruptio placenta is an indication if the child is living. Heart disease, tuberculosis, and diabetes may or may not demand section. Consultation with the cardiologist and tuberculosis and diabetic specialists will be of great assistance. In diabetes, if the condition is satisfactory and the child is not oversize, natural delivery is preferable. Heart cases, well compensated and without history of failure, will tolerate labor, and under careful supervision the same may be said of tuberculosis unless the lesion is active.

CONTRAINDICATIONS

Toxic and eclamptic cases rarely offer an indication for operation. Ill-advised operations for these patients are the chief

factor in producing the high mortality that exists in Cesarean section at the present time.

Sterilization is not considered an indication for Cesarean section. These cases are best managed by delivery from below and later on followed by vaginal sterilization under a local anesthetic. This method of sterilization⁴ is simple and easy and demands hospitalization for only four to five days.

Section is contraindicated where the patient is worn out from labor pains and has had multiple vaginal examinations. Infection also is a strong contraindication for Cesarean section either low or classical. Under such conditions either a Porro or extraperitonealization of the uterus by the Gottschalk-Portes technique or the Latzko extraperitoneal Cesarean is indicated.

Neoplasms that cannot be removed before labor are best managed by the removal of the tumor at the time of labor followed by section or by a Porro. Cesarean section should rarely be an emergency operation. The exception to this is placenta praevia centralis and abruptio placenta. Pelvic measurements and X-ray of the pelvis and presenting parts will often determine whether delivery can be carried out from below.

There is a dictum which is frequently followed out, which is "Once a Cesarean section, always a Cesarean section." I do not believe this is true unless the same cause exists in the subsequent pregnancies as existed at the time the first Cesarean section was carried out. This brings up the question of how many pregnancies should be permitted in a woman who has had a Cesarean section and the indications still persist for Cesarean section. My own plan is to permit three Cesarean sections and then either contraceptive methods or sterilization. Should the cause not be present in the subsequent pregnancies, I am of the opinion that not more than two pregnancies should be permitted after the first Cesarean section.

Experience has shown that the low cervical operation carries less mortality than the classical, and for this reason it is advocated

in the great majority of cases. It has additional advantages. There is less reaction following the operation, gastric symptoms are rare, and statistics show that the scar is not as likely to rupture in subsequent pregnancies as following the classical. Leakage is not so likely as in the classical as the scar is in the noncontractile part of the organ and is covered over by the reflection of the peritoneum. This offers an additional advantage in preventing subsequent intestinal obstruction.*

Local anesthesia is ideal, using one-fourth of one per cent novocain with three drops of 1/1000 adrenalin to each ounce of the local anesthetic, five grains of sodium luminal are given the night before the operation and repeated the morning of the operation. One-half hour before the patient is taken to the operating room one-sixth grain of morphia, 1/200 grain of scopolamine, and 1/150 grain of atropine are given hypodermically. The external vulva and vagina are carefully prepared as for a complete hysterectomy. A retention catheter is also placed in the bladder before the patient is permitted to go to the operating room, and this catheter is left open during the operation in order that a partially distended bladder may not obscure the field of operation. An incision is made from two inches below the umbilicus to the symphysis pubis. In fact it is better to extend this incision for one-half inch over the symphysis pubis. This is most important in the low operation. When the peritoneum is open, the novocain solution is carefully injected under the bladder reflection and massaged in all directions. An incision through the bladder reflection from round ligament to round ligament is then made and the reflection is carefully stripped down as far as possible, exposing the lower cervical segment. The upper peritoneal reflection is stripped back in the same way. The bladder reflection is sutured to the lower angle of the wound by an interrupted catgut suture and the parietal peritoneum is sutured to the upper and lower part of the wound with a tempo-

rory plain catgut suture. Laparotomy pads are placed at the sides of the uterus and above making a horse-shoe, keeping the intestines from the field of operation and also catching any leakage. A suture of plain catgut is now introduced in the upper part of the lower segment and another one introduced in the lowest part of the segment. These are held by forceps and are for the purpose of steadying the uterus while the incision is made through the lower uterine segment. The lower segment is then anesthetized, and a small incision one and one-half inches in length is made in the upper part of the lower uterine segment entering the cavity of the uterus. Light intestinal forceps are then slipped into the incision and placed along the sides the length of the proposed incision, for the purpose of controlling bleeding from the sinuses. With a pair of scissors the upper incision is then lengthened to the steadying suture below.

A suction apparatus is used to catch the spill, and the head is slowly delivered either occiput or face first with obstetrical forceps. Wait two minutes before starting the delivery of the body and the extremities. This gives the uterus an opportunity to contract, and during this period the eyes may be treated and the mucous removed from the mouth. The shoulders, body, and extremities are then slowly delivered. Do not hurry at this stage. The intestinal forceps are removed and tongue forceps are placed over the sinuses, and one cubic centimeter of pituitrin is injected into the body of the uterus. The placenta is then carefully removed, and if the cervix is not well dilated, it should be done with graduated dilators from above. Either No. 1 or No. 2 twenty-day chromic catgut is used in closing. A round needle is threaded on each end of the suture and to each needle is applied a needle holder. The suture embraces all coats of the uterus except the internal coat, entering about one and one-half centimeters from the edge of the wound inside the fascia layer and brought out at the same distance on the opposite side. The other needle is then entered in the edge of the wound and only embraces about one-half the depth of the

*There is less hemorrhage in the low operation, as the incision is not made at the placental site.

wound. These interrupted sutures are placed one centimeter apart. This suture has the great advantage of not leaving any dead space. It is both superficial and deep, brings the parts accurately together, and does not have to be tied tight to control any bleeding that may be present. It also has an additional advantage of not having any knots in the uterine wound. The fascial layer is then brought together with a running chromic catgut which entirely conceals the wound in the uterus. The bladder reflection is sutured with plain catgut.

If the head is unusually large or the lower uterine segment is quite short, a transverse incision is used instead of the longitudinal through the lower uterine segment. In this way a longer incision can be made, and this will give more room for the extraction of the head. If sterilization is carried out, each tube is resected without placing clamps on the tubes and the application of absorbable ligature. This is a modification of the Madlener method, in which clamps or crushing forceps are applied and nonabsorbable ligatures are tied in the groove and the tube resected distal to ligature. Lull⁵ reports 223 cases by the modified method without a failure.

The suture of the uterus that has been described is also applicable to the classical operation. The sutures in the classical are introduced in the same way inside of the peritoneal layer. In the classical Cesarean an additional running suture of plain catgut is advisable to bring together the wound edges, and all of this is covered by the peritoneal layer on the uterus which is brought together with a continuous suture of plain catgut. The abdominal wound is closed in layers and the skin with clips.

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DISCUSSION

DR. H. M. TIGERT (Nashville): Mr. Chairman and Gentlemen: As pointed out by the essayist, the operation of Cesarean section dates to remote antiquity. It was, of course, first designed for the purpose of rescuing a living baby from a woman dying undelivered near full term. Sometime later the scope of the operation was extended with benefit both to the mother and the child.

The frightful mortality incident to the procedure was due to the fact that aseptic surgery had not made its advent. Porro made an intelligent effort to thwart the high mortality by performing so-called Porro Cesarean section, which was merely a Cesarean section plus hysterectomy. Saenger really devised the fundamental steps that made the operation successful. Through the medium of modern suture material he instituted closure of the operative wounds. In more recent times Frank has popularized the extraperitoneal route described by the essayist which I think, in time, will supersede nearly all forms of Cesarean section except under special circumstances.

Cesarean section is oftentimes a spectacular procedure carried out in a dramatic manner. Fortunately this particular aspect of the operation is disappearing. It is seldom an emergency operation. As Dr. Burch indicated, in accidental hemorrhage and in placenta praevia, haste is necessary, but under other circumstances it is unnecessary to make an emergency operation of Cesarean section.

I believe that it can be conservatively stated that the general mortality of Cesarean section is between ten and fifteen per cent. Fortunately it is possible to materially reduce this percentage since puerperal eclampsia, formerly frequently treated by Cesarean section, is now successfully treated without resort to surgery. The mortality is contributed to by bunglesome efforts at delivery and ill advised tests of labor copiously springled with vaginal examinations. The indications for Cesarean section should be determined as soon as possible. I am of the opinion that X-ray examination of the mother's pelvis and the fetal head is not used sufficiently often.

I desire to commend the essayist on the thoroughness, the completeness, and the scientific precision of his presentation.

DR. W. T. PRIDE (Memphis): I have really nothing to add to Dr. Burch's paper, but it gives me great pleasure to get up and commend this paper to the society. It comes from a master surgeon and a master mind, and the paper itself will be worthy of reading when it is reported in the JOURNAL.

Dr. Burch brought out why this is called Cesarean section, and I am glad he did, because there are numbers of persons who still think Caesar was born this way.

There is one thing that Dr. Burch did not mention which he carries out, I see, and that is he

makes a fairly short incision. I make even a shorter incision. In other words, I do not make a longer incision than the baby's head.

I think Cesarean section has been abused in this manner by opening and exposing the guts. We have a law in our service that no intestine must be seen at operation for Cesarean section. Of course we who are standing right over the incision see the intestine all right, but our audience does not.

We place this pack that Dr. Burch spoke of around, and we keep the intestines packed away. This is not violent, it is not pushed against the intestines, it is right up against the uterus and against the abdominal wall, and we have found that this has prevented postoperative difficulties.

Time was when we had terrible distentions following Cesarean sections. Of course, we would expect more from relief of pressure, but as a matter of fact we have practically no gas following Cesarean sections now, from the low section less than ever.

By the way, in mentioning low section I have watched two or three men in time do low Cesareans and they not only do low, but low and high. They start in and dissect the bladder down and then go way up above the umbilicus; they have two Cesarean sections on their list. So I would say unless a low Cesarean section is done properly I think the classical will be probably better for most of them.

These operations used to be very spectacular, and they tell me that a man did a Cesarean section in seventeen minutes. He was wonderful! He would make one incision and go through the whole abdominal wall, and one of those men one day cut the baby on the buttocks. You couldn't imagine such things as that going on in recent years. We passed a rule on our service that any man who did a Cesarean section in less than forty-five minutes we would throw out of the window. Once in a while we did do one in forty minutes, maybe thirty-five just occasionally, and then the head nurse would always say: "Well, Doctor, we'll be ready to throw you out in a few minutes."

There is no hurry. Certainly a woman in good condition, as they usually are in Cesarean section, and young women, doesn't need hurry.

I enjoyed Dr. Burch's paper. It is practical and it is actually what happens every day on his service.

DR. LUCIUS E. BURCH (closing): I first want to thank Dr. Tigert and Dr. Pride for their discussions. I omitted one point in describing the technique and it was Dr. Pride's discussion that called my attention to this omission. It is, of course, a break in technique to do a low Cesarean section and carry the incision outside of the lower segment. Occasionally the lower uterine segment is not well developed. Under such circumstances I would advise a transverse incision instead of a longitudinal.

PNEUMONIA, WITH SPECIAL REFERENCE TO TYPING AND SPECIFIC THERAPY*

WILLIAM R. CATE, M.D., Nashville

PNEUMONIA constitutes one of the most serious problems before the medical profession in Tennessee—serious from the standpoint of morbidity, mortality, and economic loss—serious not only for Tennessee but for the country as a whole. One need only review the vital statistics of the Tennessee State Department of Health to realize the magnitude of the problem in our midst. It will be noted from the state vital statistics that year after year pneumonia stands second as a cause of death in Tennessee, outranking tuberculosis, cancer, nephritis, being exceeded by only one condition, namely, deaths from heart diseases. (Slide of state vital statistics.)

It probably is true for the state at large, it certainly is true for Nashville and Middle Tennessee, that pneumonia has been more prevalent this past season, and in a more fatal form, than for some years past. It has not been infrequent for a robust young adult to be taken suddenly and violently with chill, fever, pain in the side, blood-tinged sputum, consolidation, and die in three to five days. It was after several such experiences this spring, and knowing of similar cases reported by other physicians, that our interest was aroused to know more accurately the type of pneumonia with which we were dealing, and to re-evaluate the procedures being used in the treatment of this very serious condition.

It is not intended in this paper to make a comprehensive review of the management of pneumonia. The general principles are well recognized and faithfully carried out by most physicians. The importance of rest, mental and physical, need not be emphasized. An abundance of fluids is essential, chiefly in the form of water and fruit juices. If the patient desires it, moderate

amounts of soft, highly nutritious foods may be given, though such is not necessary in the majority of cases. Food is not essential—liquids are. Laxatives are to be avoided, enemas being given every two to three days if the patient is not too ill for such an ordeal. If the individual is extremely sick and taking only liquids, he need not be disturbed at all for bowel evacuations, certainly not in the height of his illness. The volume of urine should be observed to make sure there is sufficient twenty-four-hour elimination, and to detect retention if it occurs. The height of temperature need cause no concern and no attempt made to reduce it regardless of how high it goes. An abundance of warm fresh air is essential, and here the beneficial effect of oxygen, administered early and in abundance, should be emphasized. It is not necessary to wait for cyanosis, extreme toxicity, and other complications to begin oxygen administration. Labored breathing, rapid thready pulse, and marked prostration are sufficient grounds for beginning oxygen, the first day if necessary. In a report on the use of oxygen in 409 cases of lobar pneumonia, reported in the *Journal of Current Research in Anesthesia and Analgesia* (Volume 14, July-August, 1935), Evans makes the statement that "it will readily be seen that the efficacy of the oxygen is almost in direct proportion to the day of the disease on which oxygen is inaugurated." I am sure that oxygen is not being used in pneumonia to the extent that it should be used.

A great deal has been written in the past year on the use of artificial pneumothorax in the treatment of pneumonia. (Although this procedure has been used in the Nashville General Hospital in only three cases, the results were not favorable and it has been abandoned.) The conclusions reached by J. G. Bullowa and Edgar Mayer and reported in 1935 (in the *Journal of A. M. A.*,

*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1936.

July, 1935) might well be quoted concerning this measure. "There is insufficient evidence to warrant the use of artificial pneumothorax in the treatment of lobar pneumonia except in large hospitals amply equipped for bacteriologic, serologic and roentgenologic study. (Pneumothorax should not be employed by those inexperienced in the treatment of pneumonia or in the use of artificial pneumothorax. The use of artificial pneumothorax in pneumonia is still in the experimental stage.)"

The number of drugs of value in the treatment of pneumonia is very limited. Morphine heads the list. Then codeine for relief of pain and to alleviate severe and recurring paroxysms of coughing. Digitalis may or may not be given. A careful study of several hundred cases at the Nashville General Hospital in which digitalis had been used, usually in inadequate dosage, but at times to rapid digitalization, revealed no advantage in favor of its usage. (One rather carefully studied series of cases emanating from New York revealed an actual increase in mortality in the partially digitalized group, though the fully digitalized group appeared to have been helped thereby.) Cohn and Lewis, in the *American Journal of Medical Science*, April, 1935, drew the following conclusions from their observations — "Giving digitalis does not seem to influence the course of events in lobar pneumonia. Its action in favorable cases, in which auricular fibrillation and flutter occur, appears to be beneficial." If heart disease is present, this should be treated along the usual lines, irrespective of the complicating pneumonia.

Too much emphasis cannot be placed upon careful, intelligent nursing, day and night, as an important factor in determining the outcome in any case of pneumonia.

We pass now to the one factor in the management of pneumonia which obviously is being neglected by the vast majority of physicians in Tennessee, as well as in most other states. As stated in the title of the paper, special attention would be given to the subject of typing the pneumococcus and specific antiserum therapy. A great deal

has been done in recent years in further classifying the many strains of the pneumococcus, and today, based on the work of Georgia Cooper and her collaborators, reported in 1928 and in 1932 there are thirty-two types of pneumococci instead of the old Types I, II, III, and Group IV. Previous to this epochal work by Cooper and associates, from the Department of Laboratories of the Health Department of New York, many investigators had made valuable contributions to the further classification of the pneumococcus strains. (Neufeld in Germany, 1902; Avery, 1915; Sugg, 1917; Griffith in England, 1922, all made contributions to the study of Types II and III, and to classifying the miscellaneous Group IV into its component parts.) Taking into account the work of these previous investigators and gathering strains of the pneumococcus from all sections of this continent and from England, an analysis was made of many hundreds of strains of pneumococci, the results of these studies being embodied in the articles mentioned above. Briefly the results of this work may be stated in the words of the summary of the second article: "The unclassified strains known as Group IV have been separated into twenty-nine types which are designated by the Roman numerals IV to XXXII. . . . Antisera suitable for clinical trial have been prepared in quantity for nearly all the representative strains by injection of horses."

It is not possible, nor is it necessary, to go into detail concerning these studies of the typing of the strains of pneumococci. Suffice it to say that it will be impossible in the future for anyone to read the literature dealing with pneumonia without being conversant with this newer classification. Already articles are appearing on the treatment of Type VIII pneumonia, and in the *Medical Clinics of North America*, January, 1935 (page 1093), this statement is found: "The most frequent types of pneumococci encountered in cases of pneumonia are I, II, III, VIII, VII, and V in approximately that order. These six types together comprise about eighty per cent of pneumococci from this source."

At present, from a practical point of

view, the typing of pneumococci need not be carried beyond the determination of Types I, II, and probably VIII and VII, as potent antisera are available for these types only. On the other hand, if potent sera have been developed experimentally for all thirty-two types, one may predict that it is only a matter of time until therapeutic antiserum will be available for each type, and we must be ready to avail ourselves of such remedies when placed at our disposal. The time is not far distant when it will be just as slipshod to make a diagnosis of pneumonia, without giving the type, as it now is to make a diagnosis of fever, without going further to determine whether it is a case of malarial fever, typhoid fever, or some other form of continued fever.

A serious drawback to the use of specific antiserum in years past was the time it took to determine the type of pneumococcus present when confronted with a case of pneumonia. (Clinicians of wide experience in the use of antipneumococcic serum with one accord emphasize the advantages of early use of the serum, the therapeutic response becoming less satisfactory with each day that passes.) Under the older method of mouse inoculation typing the pneumococcus was a matter of twenty-four to thirty-six hours, and, as many cases are not seen until late in the first day or the second day, this delay in determining the type was an insurmountable handicap. The best time to use the serum had passed before it was known whether an homologous antiserum was available. This led to unfavorable results when serum was used, and has been a big factor in preventing widespread use of specific antipneumococcic sera. It was a big step forward when Sabin, in 1933 (*Journal A. M. A.*, May 20, in an article captioned "Immediate Pneumococcus Typing Directly from Sputum by the Neufeld Reaction"), presented a method of rapid typing, requiring at the longest not over an hour. Thus was removed one of the most serious hindrances to the widespread and successful use of specific therapy in the management of pneumonia. A discussion of this method of typing is not in order, but the summary of Sabin's article may well be

quoted. He says, "The type of invading pneumococcus in lobar pneumonia can be determined directly from the sputum within a few minutes (by a method that makes use of Neufeld's 'qualling' phenomenon)." Since 1933 this method of rapid typing has received widespread clinical usage and universal acclaim as both accurate and dependable. (Slides of the three cases from Vanderbilt.)

Monovalent antipneumococcic sera for rapid typing by the Sabin technique are available for Types I to XXIX. For practical purposes Type I is the most important to recognize. Antisera of high potency against Types II, VII, and VIII are available, and make the typing of these groups important. This method of typing is simple and can be done in the office of any physician who has a microscope.

Of equal importance with the advances made in the rapid typing of pneumococcus strains have been the noteworthy accomplishments in the concentration of sera now available for therapeutic use. Formerly it was necessary to give 100 cubic centimeters of horse serum to obtain 10,000 protective units. Now the same number of units may be administered in ten cubic centimeters of serum, the concentration being ten times that of the formerly used whole serum. (As it is often necessary to administer 30,000 to 120,000 units to obtain therapeutic results, the amount of whole serum formerly used would amount at times to 200 to 500 cubic centimeters, and frequently more. With such large amounts of whole serum injected intravenously, it is little wonder that serious allergic reactions were frequent and at times fatal.) With the present-day concentrated serum, from which the proteins have been removed to a large extent, the total amount injected varies from eighty to 100 cubic centimeters, and serious reactions are rare. It is estimated that mild allergic phenomena will occur in five per cent of cases, and serum sickness in twenty to twenty-five per cent.

Felton, who has done such valuable work in the concentration and standardization of antipneumococcic serum, in an article (*Journal Infectious Diseases*, Volume 43,

1928) on concentration of pneumococcus antibody says that it is high in protective power and, for intravenous injection, is practically free from severe chill-producing characteristics.

Unfavorable experience with the previously used unconcentrated whole serum, fear of a severe reaction, nor indifference should keep one from acquainting himself with the value of specific serum therapy in pneumonia, from studying the indications and contraindications to its use, and employing this valuable therapeutic agent in properly selected cases. The use of anti-pneumococcic serum, particularly in Type I and II pneumonia, has passed the experimental stage and is a firmly established, acceptable procedure.

Dr. Maxwell Finland, writing in the Medical Clinics of North America, January, 1935 (page 1093), has this to say relative to Type I pneumonia, "In unselected cases due to this type, treated symptomatically or with most of the agents applied other than specific antiserum, the case fatality is somewhat over thirty per cent. In similar cases properly treated with type specific antiserum the mortality rate varies from ten to twenty per cent." Of Type II pneumonia he says, "The fatality rate in nonserum treated cases of this type is about forty per cent. In unselected cases of this type treated with good type specific antiserum the mortality rate is twenty to thirty per cent."

William Belk (Journal A. M. A., September 14, 1935, volume 105, page 868), reviewed all the reports in the American and foreign literature up to January, 1935, that lent themselves to statistical study, and says that only one allergic death had been reported, that the mild allergic reactions are easily controlled with epinephrine and that the antibody solution has been given successfully to known allergic individuals. His combined series of Type I pneumonia showed a mortality per cent of fifteen in the serum-treated cases, and twenty-five per cent in the control series, a reduction of forty per cent in the mortality rate by the use of serum alone.

Cecil and Plummer (Journal A. M. A.,

November 22, 1930), reported the use of Felton's serum in 239 cases of Type I pneumonia with a mortality rate of twenty per cent as compared with a mortality rate of thirty-one per cent in a controlled series of 231 untreated cases. There is a further reduction in the death rate to 11.7 per cent in cases treated within seventy-two hours after onset. From this experience they conclude, "Type I serum is no longer in the experimental stage. When administered early and in therapeutic doses, the clinical results are striking."

Time forbids, nor is it necessary, presenting further statistical evidence of the value of type specific antiserum in Type I and II pneumonia, and, it is hoped, and indeed may be confidently expected, that in the near future just as potent sera will be available in the treatment of the other types.

Briefly the contraindications to the use of serum therapy in pneumonia should be mentioned, and a warning issued against the use of serum in unselected cases without regard to pre-existing allergic tendencies or associated illness.

Maxwell Finland, in his article mentioned previously, says, "In general, serum is indicated in all cases who have acute pneumonia and from whom pneumococci are isolated of a type for which potent and effective antibody is available, namely Types I, II, and probably Type VII."

Contraindications. — 1. Children under twelve years of age. 2. Type II infections in patients over sixty years of age. 3. Cases seen after the end of the fourth day of the disease. Many clinicians do not agree that serum is valueless after the fourth day of illness, but insist that it be given to every case, regardless of the day of illness, if it is a type for which a potent serum is available. 4. Serum should not be used in patients who are in extremis, in those with definite pulmonary edema, in those patients having the appearance of shock, with coma or stupor, ashy cyanosis, cold clammy skin, very low blood pressure, and rapid thready pulse. 5. It is inadvisable to use serum in persons who show positive skin or conjunctival serum reactions, or in allergic indi-

viduals who have a history of sensitiveness to horse serum or horse dander, or who have received previous injections of horse serum. If it is deemed advisable to use serum in such an individual, he must be carefully desensitized by repeated small injections, the reactions watched, and when possible, the dosage increased at each injection until the full amount of serum is given. Any one who plans to use serum in this or any other illness should first acquaint himself with the various forms of allergic reactions, how to test for sensitiveness, stay with the patient for at least thirty minutes after the serum is given, and be equipped to cope with any emergency that may arise. It is not necessary to hospitalize all cases of pneumonia before serum is given. Serum may be given as well in the home when the proper precautions are observed and the patient can be kept under observation.

As far as we know, no attempt has been made to determine the percentage occurrence of the different types of pneumonia in Tennessee. To this end a study was undertaken of 170 cases of pneumonia admitted to the Vanderbilt Hospital, 111 of whom had been typed, to determine the prevailing types of pneumonia in this section. The older classification of I, II, III, and IV were used, as homologous sera for the higher types were not available. This study was made by Dr. Thomas Frist, to whom I am indebted for the use of this material.

Of the 111 cases that had been typed, twenty-three per cent were Type I infections, with ten deaths, a mortality rate of thirty-nine per cent; fourteen Type II infections, twelve per cent, with seven deaths, a mortality rate of fifty per cent; seventeen Type III infections, fifteen per cent, with three deaths, a mortality rate of eighteen per cent; fifty-four Type IV infections, forty-eight per cent, with sixteen deaths, a mortality rate of thirty per cent.

Among 3662 cases treated in Bellvue Hospital from 1920 to 1930 and reported by Cecil and Plummer in 1930 (*Journal A. M. A.*, November 22, 1930) the four types occurred as follows:

Type I, 30.9 per cent—Vanderbilt series, twenty-three per cent.

Type II, 23.2 per cent—Vanderbilt series, twelve per cent.

Type III, 11.9 per cent — Vanderbilt series, fifteen per cent.

Group IV, 34.1 per cent — Vanderbilt series, forty-eight per cent.

It will be seen that the greatest variation is in the increase in Tennessee of the number of Group IV infections, from 34.1 per cent in New York to forty-eight per cent here. It will be noted that there is an incidence of twenty-three per cent Type I infections, and it is in this group that the most benefit is to be derived from specific serum therapy.

Age.—Seventy-three per cent of the cases occurred between the ages of fifteen to forty, thus emphasizing again that pneumonia is a disease primarily of the young adult. The lowest death rate was from the youngest age group, fifteen to twenty, with a mortality rate of nine per cent. The highest rate was in the group sixty to sixty-nine, the death rate at this age level being seventy per cent. Thus pneumonia becomes increasingly serious after the age of fifty.

Blood cultures were made on 114 cases. Thirty were positive, or twenty-six per cent; eighty-four negative, or seventy-four per cent. Of the thirty cases with bacteremia, twenty-one died, or a mortality of seventy per cent, whereas the death rate for the group as a whole was only thirty-one per cent. Cases with positive blood cultures comprised only eighteen per cent of the total group, but accounted for forty per cent of the deaths. The extreme seriousness of a bacteremia has been emphasized by many writers, and is fully borne out in this brief series. Furthermore, anti-pneumococcic serum has proved of decided value in the hands of many investigators in freeing the blood stream of such infection, Belk (*Journal A. M. A.*, September 14, 1935) reporting a reduction in mortality from sixty per cent in 103 bacteremias without serum to thirty-three per cent in 190 cases with serum. The marked advantage of serum in cases with bacteremia would emphasize the importance of making

an early blood culture in every case, and the immediate use of serum if a type specific serum is available.

In closing I would like to urge upon the medical profession of Tennessee a more detailed study of every case of pneumonia, bronchial as well as lobar. That every physician equip himself for typing the pneumococcus, and every case be typed at the first visit. Typing might well be undertaken by the public health units in those counties with full-time units. Secondly, that a blood culture be made in every instance, and when available, the homologous antiserum used early and abundantly, if a bacteremia exists. Thirdly, that each one of us acquaint himself thoroughly with the indications and contraindications to the use of serum, and begin specific therapy early in every properly selected case.

DISCUSSION

DR. J. L. BIBB (Chattanooga): As usual, Dr. Cate has given us a wonderful paper, something we ought to consider and consider seriously. We have all been asleep about the use of serum. Just a month ago at the last meeting of the American College of Physicians in Detroit, with the possible exception of Dr. Paul White, who is always a star, and two papers on the heart, I would say the best paper that we had was on the subject of the treatment of pneumonia, particularly with reference to serum. I heard three or four, but the best two, I would say, were from Meaker, who is head of the Montreal General Hospital, and an ex-president of the American College of Physicians, and Cole of Rockefeller. Briefly, they brought out some points that I think we ought to consider seriously.

First, that Type I pneumonia is a specific infectious disease and should be considered as such separate from other pneumonias. It is killing 25,000 people in America today, and we ought to do something about it. With the larger series that Meaker had, his mortality from Type I without the serum was 33.6 per cent; with serum given any day, not just in the first few days but any day, it was fifteen per cent, but if they got that serum in the first four days, his mortality was reduced to 9.6 per cent. That is quite a re-

duction. Cole of New York got even better results. His reduction went down, if he could get the serum in the patient before the end of the third day, from thirty-three to four per cent. Therefore, it seems to me that what we should do is not wait, as so many men do, for consolidation to make a diagnosis; make your diagnosis on symptoms of chill, high fever, pain in the side, productive sputum, particularly if it has blood. Get your typing by this new method, viz.: swelling of the capsule of pneumococci. Try to get your serum in before the third day, and you will certainly go a long way toward solving this great problem.

Meaker's statistics with reference to bacteremia were just about the same that Dr. Cate reported. In Type I mortality was reduced fifty per cent if serum was used. We used to think bacteremia was universally fatal. With reference to the other types, he used serum in Type I, II, VII, VIII, and XIV. His results in Type II were not at all convincing, but in Type VII with serum the mortality was six per cent, without twenty-two per cent; Type VIII with serum 7.5 per cent, without twenty-eight per cent. Type XIV with serum, mortality fourteen, without twenty-three per cent. It seems to me, then, that we should get behind this.

I talked to some of the men who are attached to the health department of the State of New York, and they said they were so impressed with the Massachusetts statistics last year that they were establishing stations all over the state and they were going to give their rural doctors and small-town doctors as quick service as possible. The question of typing pneumonia is assuming the same importance as an emergency blood count in an appendix. I believe we will solve a great many of our problems in pneumonia if we will pay attention to this very excellent paper of Dr. Cate.

DR. W. R. CATE (closing): The purpose in bringing this paper before you at this time was not to present any personal experience with the use of antipneumococcal serum, since we have used it in only a very limited group of cases. The time has come, however, when we can no longer take an indifferent attitude toward this very valuable therapeutic agent. I, too, hope the time will come, and not very far hence, when there will be established, probably in connection with our public health units in counties where there are full-time units, services for rapid typing of the pneumococcal strains, making the use of serum available to most, if not all, of the physicians in the state.

POSTGRADUATE EDUCATION IN TENNESSEE: PLANS FOR THE FUTURE*

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I CAN THINK of no better way to open this discussion than to quote directly from a recent editorial entitled "Progress and Retrogress" by Dr. Henry A. Christian. He says:

"Physicians can be divided into two great groups, those that are learning and those that are forgetting, those that each year know more and those that each year know less. There seems no third group, those that are stationary.

"A few physicians increase in knowledge from within and grow from their own doing. These are the innate investigators. The rank and file require outside help to grow and progress. Books, meetings, contacts, discussions, teachers are our armamentarium for progress. Like the 'spring tonic' of past days, all of us need some of this medicine, at least annually, better if it comes more frequently. A large majority of physicians know their need and seek treatment.

"Things in nature are rarely static; they increase or they decrease; they grow or they decay; they progress or they retrogress. Man's education in many respects resembles things of nature; rarely is it static; when knowledge does not increase, almost always it decreases. Physicians should remember this and make every effort to keep out of the static state and on the side of increase, of growth, of progress. . . . Herein lies medical progress."

The history of medical education in Tennessee constitutes one of the most interesting chapters in the annals of medicine in this country. There is a record of eighteen different medical schools in this state, eleven of which were in operation as late as 1909. Through the efforts of the council on medical education of the American Medical Association this number was reduced in

five years to a total of three. Few are aware that the first medical school in Tennessee (the Memphis Medical College) was established in Memphis just ninety years ago (1846).

With such an interest in medical education, it is surprising that there has been so little attention paid to the subject of postgraduate instruction.

Time will permit only a brief reference to the history of postgraduate medical education. The first systematic instruction to medical graduates was given in New York as early as 1809. But it was not till 1882 that a school was organized for the exclusive purpose of giving instruction to medical graduates. In that year the New York Postgraduate Medical School and the New York Polyclinic were organized. In these, as in similar schools which soon followed, emphasis at first was largely on the improvement of the general practitioner, an effort "to mend a machine that was predestined to break down" because of weak and inadequate undergraduate instruction.

With the rapid improvement in the medical schools and the great advances in the medical sciences, emphasis in postgraduate schools rapidly shifted to the training of specialists. According to the report of the committee on the cost of medical care, thirty-six per cent of all medical graduates specialize. This survey, of course, was prior to 1929: doubtless the percentage today would be somewhat lower. It is of interest to note that when the graduates from certain schools were followed the percentage of those specializing was much higher. For example they found that 75.1 per cent of the Johns Hopkins graduates become specialists.

In looking over the catalog of any medical school today—and they are all so standardized that there is little choice as to the number of hours assigned to a given subject—one is impressed with the overemphasis given to the specialties. We would not de-

*Read at the annual meeting of the Tennessee State Medical Association, Memphis, Tennessee, April 15, 1935.

cry the importance of the specialties in the field of modern medicine, but since ninety per cent of all medical practice is done by the general practitioner, more serious attention should be given to planning a curriculum which will better equip the graduate for general practice.

We point with pardonable pride to the rapid advance medical science has made and is making. At the same time we are compelled to admit that a large majority of the general population, especially those in the villages and rural communities, are not receiving the full benefit of this progress. The quality of medical service which a given community receives depends in the main on three conditions:

- (1) The ratio of the number of practicing physicians to the population.
- (2) The quality of the undergraduate training of these physicians.
- (3) The ability of these physicians to keep abreast with medical progress.

The problem of undergraduate training is being handled quite satisfactorily by the medical schools. The medical graduate today is far better prepared to begin practice than any of his predecessors. Moreover some of the medical schools, notably the University of Tennessee, have concerned themselves with the distribution of physicians. We often hear it stated that the profession is overcrowded and that the medical schools should restrict the number of graduates. While it is true that there is an overcrowding of physicians in some localities, it is equally true that there are other sections where there is a paucity of doctors. The overcrowding is limited to the cities and larger towns, while many rural communities are undersupplied. The University of Tennessee recently made a careful analysis of the situation and found that a large percentage of medical graduates eventually return to practice in the localities from which they originate.

In 1923 Tennessee was suffering a net loss of fifty physicians annually. The number is now about stationary and, according to Dr. O. W. Hyman, seventy per cent of the graduates of the University of Tennessee return to their home communities to

practice. Out of a total of eighty-five graduates in 1933, sixty have entered practice, forty-nine of whom are in rural areas. Thus the medical schools are not only responsible for the undergraduate training but by a process of selecting the students are contributing substantially to the problem of supplying physicians to rural areas.

After beginning practice, another problem arises: How is the general practitioner to keep abreast with medical progress? What can be done to help bridge the gap between new discoveries in diagnosis and treatment and their application in general practice? A number of medical schools are offering postgraduate courses. Some of these courses are well organized and are especially designed to aid the general practitioner. More often they are in the form of intensive courses on certain subjects, designed primarily for the specialist. While all such courses are well worth while, the great majority of general practitioners, for economic and other reasons, cannot take advantage of them. Unless he is subsidized as is being done for a selected few by the Commonwealth Fund, the practitioner will not leave his practice to go to these medical centers to attend postgraduate courses.

A number of plans have been tried to improve the status of the general practitioner. The Michigan State Medical Society at its annual meeting in 1933 appointed a committee to make a survey of the needs of the general practitioner and at the same time to investigate the various plans that had been tried by other state associations and institutions interested in the problem of postgraduate instruction. This committee, headed by the late Dr. C. G. Jennings of Detroit, made a comprehensive study which included some of the adjoining states, and attempted to evaluate the various plans. The results of this study were published in 1934 in a brochure entitled "Postgraduate Medical Education and the Needs of the General Practitioner." After reading this report, one is convinced that as yet no altogether satisfactory plan has been evolved. Furthermore, since conditions of practice vary so much in different localities—for example, the needs of men practicing

in industrial centers will always be different from those in agrarian sections—it is unlikely that any plan will be found that will be equally suitable to all. It seems, however, that the *circuit plan* which was originated in North Carolina in 1916 has been the most effective. This plan provides for itineraries in each of which there are five or six teaching centers. The instructor visits each of these centers once a week for twelve weeks, giving a lecture, usually followed by a clinic or demonstration. The doctors attending pay a registration fee which is to cover the expense of organization and the salary of the instructor.

Various modifications of this plan have been tried, the most successful of which have been those sponsored by the respective state medical societies. The most recent, and so far as we can learn the most effective, is the circuit plan now in operation in Mississippi. Beginning in January, 1935, the Mississippi State Medical Association in collaboration with the state health department inaugurated an intensive postgraduate course in obstetrics. Dr. Underwood advises that twenty-four months will be required to cover the entire state. I have talked to members of the committee in charge and with a number of men who have taken the course and the impression gained is that the plan has been highly satisfactory to both. In a number of instances the committee has been requested to have the course repeated. While this work is directly under the auspices of the state medical association, they have received substantial aid from outside sources.

Although the majority of the committee on the cost of medical care has received much adverse criticism, it has helped to focus attention on the forgotten man in medicine, the general practitioner and his needs. That our association has been cognizant of such a need is evidenced by the creation three years ago of a standing committee on postgraduate education.

Two serious obstacles have handicapped the work of this committee, lack of money and lack of information relative to the specific needs of our general practitioners. Obviously, before a worth-while remedial

program can be formulated, a complete survey must be made similar to that already referred to in Michigan. Pending such a survey in Tennessee, we will utilize as far as possible data obtained from other states. Therefore no claims of originality are made for the recommendations which follow:

In planning an effective state-wide postgraduate program what are the most important factors to be considered? Until a survey of Tennessee is made, this question can be answered only in general terms.

- (1) The first factor to be considered is the *educational background of the physicians as well as their financial conditions*. These men better than any one else know their needs and should be allowed to select the subjects to be taught. There are certain subjects, for example, obstetrics, which are of universal interest. The state committee on maternal welfare is doing a splendid job in trying to find out the reason for the high maternal death rate and will aid in formulating a postgraduate course in obstetrics.
- (2) The second factor is *the training and experience of the instructor*. To be effective he must be able fully to appreciate the practitioners' problems. There is no training that will help him to get this viewpoint like actual private practice, preferably in a small town or rural community.
- (3) *The time and place of the lectures and clinics* must have careful consideration. The plan should impose a minimum sacrifice of time and effort on those attending.
- (4) *Unification is one of the most essential factors in the entire program*. The courses must be carefully planned, and the lectures must follow a logical sequence, if interest is to be maintained.

Obviously, therefore, if these men are to be helped, a plan must be devised whereby instruction can be carried to them. This is not a job for the medical schools. The responsibility rests squarely on the state medical association and the state health de-

partment. It is more than an obligation, it is indeed an opportunity. With a state health department completely free from political control—a goal yet to be accomplished in Tennessee — and working shoulder to shoulder with this association, we cannot only raise the standard of practice but we can render a type of service to the public as yet undreamed of. When this association has thus justified its existence, we need have no further fear of state medicine.

DISCUSSION

DR. W. C. DIXON (Nashville): I think that the Tennessee State Medical Association has taken in recent years two very definite forward steps. The first of these I think is the sponsoring of the bill which gave the medical profession some measure of control over the state health department. The second most important step they have taken, perhaps more important than that primarily, is the formation of the education committee, of which Dr. Warr is the efficient chairman.

I believe we can all agree with Dr. Warr that undergraduate medical instruction is now being satisfactorily handled in a large number of schools.

The question of postgraduate instruction, however, is one that is not so satisfactorily handled, and it has inherent difficulties that do not apply to undergraduate instruction. Those difficulties have been brought out by Dr. Warr: the necessity for the doctor to be able to reach the instructor without too much loss of time and without too much expense. I think we can all thoroughly agree with him that there is no agency or no body that can carry out that type of education except the state medical society. We have made a beginning in the handling of this question.

Along that line, the liaison committee has made some study of the question of tuberculosis in this state. I am going to use that as an illustration of what might be done. The state board of health reports that there are 2,500 deaths per year in the state from tuberculosis, and they estimate that there are 25,000 cases of the disease in the state. Every few years some group of people or some individual comes forward with a scheme to have the state build a few tuberculosis hospitals. In my judgment, one or two or three hospitals caring for a few hundred patients would be absolutely detrimental because it would give us the impression that adequate care was being taken of the tuberculosis situation.

In view of the tremendous number of cases and in view of the large expense of maintaining a tremendous number of beds, it is utterly impossible for the state or for any subdivision of government to take care adequately of the patients in their areas who have tuberculosis. So some other way has to be found of handling the tuberculosis situation if we are going to get anywhere.

You are all aware of the fact that pneumothorax in the treatment of this disease is the most satisfactory method where a great many of the patients can be treated as out-patients without hospitalization or perhaps with a short stay in the hospital and then the lung be kept collapsed until relieved of the disease. This, of course, makes closed cases out of open cases where it can be applied, and consequently reduces the number of contacts and has a direct benefit to the individual who is being treated.

In view of all these facts, we have recommended to the house of delegates that this very efficient education committee which we have been requested to arrange for courses on the diagnosis and the treatment of tuberculosis in various centers in the state where the facilities are available for such a course.

We do not believe that a four or five-day course will make an expert phthisiotherapist or will make a man expert in all phases of tuberculosis, but we do believe that some application of the knowledge which is now in possession of the profession of the treatment of tuberculosis, using hospital beds in general hospitals where hospitalization is necessary, would really be a forward step in the handling of this disease for which we now prescribe milk and eggs, rest in bed, which means nothing.

I do not know whether the house of delegates is going to adopt it or whether the education committee is going to carry it out, but we feel that that would be a definite subject coming under the head of education that we could take up and make some definite progress in the handling of the disease for which we now do very little.

It has been shown in some general hospitals, for instance, in Nashville in the City Hospital, where colored people and charity patients are taken care of, that they keep fifty or sixty of these patients under collapse all the time, ambulatory patients going and coming to the hospital, and are getting very wonderful results. There are hospitals all over Tennessee that have adequate facilities for handling these cases, they have doctors who are thoroughly competent to apply the treatment—they perhaps need some little instruction in the beginning. Therefore, we made the recommendation to the house of delegates that such courses be established.

That is merely an illustration of some of the things that can be done in an educational way and that will be of help in distributing the knowledge we have on various subjects that perhaps is not now generally known.

I am sure that the society is to be congratulated on having a scholarly chairman of that committee such as Dr. Warr, who will certainly make progress along the lines of education delivered to the practitioner.

DR. VANCE H. BELL (Cleveland): I finished school here in 1929. I happened to be a student under Dr. Warr, so I want to discuss this paper.

I know that the ideal method of instruction for

doctors today is considered to be to finish a medical course and then take two or three or four years postgraduate work in a hospital. Fellows like myself, who had worked while they were in medical school and borrowed money besides, did not have the money to take those four years, and after one year's internship I had to get out and go to work in a small town, a town of 10,000 people.

Having had a year's internship, we go out and start with some conditions, for example, a little operation, and we see that it is not what it should be, and we wonder what is the matter. We know that we have not done it as we had been instructed. Then we have an opportunity to go back and take a postgraduate course, and we talk to some of these masters, who take us alongside the patient and demonstrate to us how it is done and where we have been wrong, and it makes it much easier and much simpler for us.

After being in practice for six months and having a great many patients complaining of genitourinary diseases, of course, I would find pus in the urine, but I could not tell exactly where it came from. I ordered myself a cystoscope. I had never used one before. I inserted it and I could not see anything. I punished the patient for forty-five minutes and then removed the cystoscope, he got off the table and left in disgust. I fooled with that cystoscope, took out the telescope and turned it over, and discovered the lens upside down and I could not see anything. I know if I were to go back today and take a postgraduate course of one, two, three, or four weeks in cystoscopy I would be much better able to understand it now than if I had gone along after finishing medical school with no experience. I know how little that I do know, and what I should know.

Dr. Warr makes the statement that one of the best methods is to carry these clinics from town to town. I know in our community we would not be able to get the wealth of material to demonstrate the pathology and diseases that you would here in Memphis.

I appreciate this paper very much and enjoyed

hearing Dr. Warr, and I hope that it will result in postgraduate courses here in Memphis.

DR. O. S. WARR (closing): I appreciate Dr. Dixon's discussion and particularly his remarks regarding postgraduate instruction in tuberculosis. There is no doubt about the need for postgraduate instruction in the diagnosis of tuberculosis, and this will be included in our program as rapidly as our financial resources will permit. Postgraduate work which depends entirely on voluntary instructors has never been successful, although it has been tried in a number of states. Last year, with hope of providing more funds for postgraduate work, the house of delegates increased the dues to the state association \$2.00 per capita. The result so far has been quite disappointing. It is quite evident that the rank and file of the membership of the association have not been sold on the Tennessee State Medical Association. This is evidenced by the small attendance at each annual meeting. Why do not the doctors over the state attend the annual meetings of the state medical association? Either it is because they are not interested in the affairs of the association or because the programs are not sufficiently attractive. We had a comparable situation ten years ago with the old Tri-State Medical Association. The attendance had dwindled down to a mere handful until we began to invite speakers from outside of immediate territory. Immediately the attendance began to **improve, and now** we have one of the outstanding medical organizations in the country with a registration of more than a thousand this year. When an attractive program is offered, the doctors will come. Otherwise they will not. Your committee on postgraduate education is trying in every way possible to interest the doctors over the state in the affairs of the state association. We are trying to help them arrange more attractive programs in their county and group county societies. We hope that the program committee for the state association will give serious thought to the arrangement of next year's program with the hope that we may attract a larger attendance than we have been having in the past.

URINARY ANTISEPTICS*

GEORGE R. LIVERMORE, M.D., F.A.C.S., Memphis

IN MARCH, 1921, Edwin Davis said, "There is no sound experimental or clinical proof of the fitness of any known drug for use as an internal urinary antiseptic." Since that statement appeared many efforts have been made to discover an internal urinary antiseptic, and although many so-called ones have been put upon the market (even our great *Journal of the A. U. A.* carries the advertisement of one that claims to make old age happy by quickly relieving the pain and frequency of urinary infections), none worthy of the name has been found.

It is indeed surprising to see the diversity of opinions as to the value of urinary antiseptics in our medical literature.

Many men whom we know, love, and respect state that a certain preparation is the last word in urinary antiseptics, while others whom we hold in the same high esteem state that the aforesaid drug is absolutely worthless. What is the reason for this diversity of opinions? I believe the favorable reports to be due to overenthusiasm expressed in terms of results obtained in conjunction with local treatment. Said results being entirely due to said local treatment. All of us have at times thought of giving a patient some special drug, but later decided not to do so, and the following day found the patient greatly improved. Had we given the drug, we would have been willing to swear that it undoubtedly was responsible for the improvement.

Dr. Haggard in his book, "Devils, Doctors, Drugs," says our predecessors (and not too distant predecessors at that) formed their conclusions in exactly the same manner. They gave dried lizards or ground human skull bones to some one who was ill, the patient recovered, hence the dried lizards or ground skull bones cured the disease. Until we put urinary antiseptics on a rational scientific basis, no progress will be made and no urinary antiseptics will be discovered.

Hugh Young, Davis, and their coworkers

at Johns Hopkins gave us the postulate to which an ideal urinary antiseptic should conform. It should be chemically stable, nontoxic, and nonirritating to the urinary tract. It should exert an antiseptic action in high dilution in urine of any reaction and should be eliminated in high percentage by the kidney. I would add to this, it must be capable of sterilizing the urinary tract without the aid of lavage, or any manipulation. When we have a urinary antiseptic that conforms to the above, then and then only, will we have one that is worthy of the name. We would not expect any urinary antiseptic to be able to sterilize the urinary tract in tuberculosis, tumor, calculus, or retention.

Hexamethylenamine Tetramine (Urotropin).—This can be given either by mouth or intravenously. Large doses may be given without deleterious effects except hyperemia of the bladder mucosa which causes frequency, burning, and at times hematuria. We give ten grains by mouth four times a day and in many cases give thirty-one grains intravenously twice a day in addition. Its effect depends upon the liberation of formaldehyde in the urine. In order to obtain this effect the urine must be acid. Ammonium chloride, acid sodium phosphate, or sodium benzoate may be administered to keep the urine acid. Metcalf and Scott state that "urotropin (hexamine) in well acidified urine cures at least one-third of the cases of nonsurgical pyelitis and cystitis." That urotropin exerts some antiseptic effect upon the urine there is no doubt, but should not be relied upon alone to sterilize the urine. In the cases which it appears to do so, I believe the good results are due to the increase in the amount of fluids the patient takes, the rest in bed, and the restricted diet, rather than to the liberated formaldehyde.

Davis reported some years ago that urotropin was capable of reducing the number of cocci in the urine, but would not sterilize it. Given intravenously in thirty-one grain doses twice daily in addition to its oral administration, its value is enhanced, not so much as a urinary antiseptic, but as a pre-

*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1936.

ventative of rigors and fever following any instrumentation or operative procedure on the urinary tract. It is also of great value in controlling them after they have occurred in pyelonephritis, following operations or the passage of instruments. I believe this effect is due (not on account of the increase in liberated formaldehyde in the urine, as I do not believe sufficient formaldehyde to sterilize the urine could be liberated in vivo, without damage to the urinary tract of the host) to some reaction on the blood (vaccine, foreign proteid, etc.) that increases the antibodies which are capable of overcoming the invading organisms and counteracting their toxins.

It is a fact, however, that, when given both orally and intravenously, patients with rigors and fever of urinary tract infection and following operations (especially resection of the prostate) return to normal more promptly or have less fever than those to whom it is not given. Also as a preventative of reactions following instrumentation, especially in urethral dilatation for stricture, it has proven almost a panacea.

I am now treating a physician for stricture who (before coming to us he said he always had a rigor and high fever when a sound was passed) calls it his guaranteed insurance against rigors.

Acriflavine.—Despite the claims of Davis that a large proportion of cases of acute urinary infections have shown a prompt improvement on acriflavine one-tenth gram twice daily, I have never seen any worthwhile effect from its use. The urine must be kept alkaline to get results. I know I have obtained equally as good results with alkalis alone as when I used acriflavine in addition.

As an irrigation in infections of the urinary tract to the urethra, the bladder, and the pelvis of the kidney, it has proved very satisfactory in my hands. In the treatment of gonorrhea, the urethra should be irrigated every other treatment with a 1-10,000 solution, followed by an injection of 1-4,000. On the alternate treatments permanganate 1-6,000 and five per cent argyrol should be used. Acriflavine in solutions stronger than the above may be irritating to the mucosa of the urinary tract, especially of the urethra, producing a chemical inflammation that often results in

a stricture. As a bladder irrigation, it is very satisfactory in 1-10,000 solution, with a small amount of 1-4,000 left in the bladder afterwards. It may also be used in lavaging the kidney pelvis in 1-4,000 solution. As a medium for cystoscopy it is very satisfactory, and I use it in all infected cases in 1-10,000 solution. Its pale, greenish yellow opalescence does not interfere with visibility except in rare cases.

Davis and Scott say acriflavine in alkaline urine is unfailing as an antiseptic, but in efficient doses two-tenths gram causes nausea and catharsis in a fair proportion of cases. Davis agrees with Gordon of New Orleans that water is the best urinary antiseptic we have.

Mercurochrome.—Mercurochrome was developed by Hugh Young and his coworkers at Johns Hopkins in 1919, and was heralded as a lifesaver in septicemia of bacillary origin, but results were also obtained in coccus infections. It was also said to be an efficient germicide for the treatment of all wounds and was a satisfactory gonococcicide when used as an injection in gonorrhea.

Beginning with the last claim, as a treatment for gonorrhea, it is practically worthless, and when used in the bladder often causes bladder irritation and retention, which may necessitate catheterization for relief. As a treatment for wounds, it is very satisfactory in two to five per cent solution. I know of no preparation that will keep the suprapubic wound, following bladder operations, in such splendid condition as mercurochrome, and being practically free from irritation, it is especially valuable.

Intravenously.—I have seen some very spectacular results in blood-stream infections and in the control of rigors and fever in acute pyelonephritis and in urethral chills and fever. Injected in one per cent aqueous solution, it frequently is followed by a chill and high fever, but if given in fifty per cent glucose, such a reaction is rare.

Being a mercurial preparation, it must be used with caution where the kidney is damaged. From two to five cubic centimeters will usually cause a prompt subsidence of rigors and fever, but it may have to be repeated one or more times. The urine should

be examined before each injection. I have never seen any harm result when used as I have outlined. It is practically worthless when given by mouth.

Pyridium.—From the reports of many observers I was led to believe that pyridium was destined to eliminate all urinary tract infections. After an extensive use of this drug, I must agree with Keyes, who states that mercurochrome, pyridium, and acriflavine have no value when given by mouth beyond the impression they make on the patient's mind. It is also said to be especially valuable in the treatment of gonorrhea. I have given it repeatedly and have yet to see a case where it seemed to exert any other action beyond staining the urine. In some cases of pyelonephritis with frequency and burning I have noted some relief of bladder symptoms. This is the only beneficial effect I have observed. Davis and Sharp conclude that pyridium is practically inert, and Metcalf and Scott state that it has given no evidence of antiseptic value.

Caprokol.—When Veador Leonard called our attention to this preparation in 1924, his observations and deductions seemed so logical and convincing that I began its use, despite its almost prohibitive cost. It was an expensive experiment, however, for beyond the depletion of my patients' pocket-books and the difficulty in swallowing such large capsules the effect was nil. Metcalf and Scott say caprokol has given no evidence of urinary antiseptic value, and Davis and Sharp concluded it is only slightly antiseptic. It is beyond my comprehension why the *Journal of the A. U. A.* accepts the advertisements of manufacturers of urinary antiseptics who make such claims for preparations that have not proved their worth.

Neoarsphenamine.—In the use of this preparation in the treatment of syphilis, it was accidentally discovered that certain cases of pyelonephritis were benefited. Its results, however, are too uncertain, and as its administration is not without danger, I would not recommend it as a urinary antiseptic.

Mallophone. — Keyes' statement about pyridium, mercurochrome, and methylene blue applies equally as well to mallophone.

CONCLUSIONS

I. No satisfactory urinary antiseptic for oral administration has yet been discovered.

II. Hexamethylenamine tetramine or urotropin is the best one that we now have, but it falls far short of being satisfactory.

III. All preparations for use as medicines in urology should be submitted to a board, composed of men of large experience, who could give them sufficient clinical trial to determine their worth, before allowing high-pressure salesmen to foster products of little or no value upon urologists who have had no opportunity to test them.

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DISCUSSION

DR. TOM BARRY (Knoxville): Dr. Livermore was kind enough to send me a copy of his paper.

Had I put in writing my own ideas about urinary antiseptics, they would differ very little from what you just heard the essayist read.

Each year a new urinary antiseptic has been placed on the market, each one with most extravagant claims, and without the slightest experimental or clinical basis for these claims. Countless millions of dollars have been uselessly spent by indiscriminate prescribing of so-called urinary antiseptics. I, too, admit my culpability.

I had the pleasure of hearing Dr. Veador Leonard in his address before the American Urological Association in 1924, calling our attention for the first time to caprokol. His experimental and clinical results were so impressive that the whole medical profession was convinced that at last the ideal antiseptic had been discovered.

After many months of clinical use with laboratory control, I discarded this too, together with the other useless antiseptics. I have seen not the slightest evidence of benefit that has been derived from the administration of caprokol, except some diminution in bladder discomfort.

Acriflavine, mercurochrome, the latter both orally and intravenously, pyridium, mallophone, serenium, and so forth, have all been thoroughly tried over a long period of time and relegated to the long list of useless drugs.

Neoarsphenamine is, I think, of some slight value in coccic infections of the kidney, but should be used cautiously, as the essayist pointed out.

Urotropin, in my opinion, is the only drug which has any value as a urinary antiseptic. Enormous doses of 100 grains or more daily are essential for satisfactory results. Very few patients, though, can stand 100 grains a day without a great deal of bladder distress. As an acidifier in conjunction with urotropin, either ammonium chloride or

ammonium nitrate, or even straight nitrohydrochloric acid, is usually sufficient.

Although the antiseptic value of urotropin theoretically depends on the production of free formaldehyde, Rountree has shown that it has decided antiseptic properties even in the absence of formaldehyde production.

In the use of urotropin to prevent chills in instrumental work, I think it has a great deal of value if you can give it sufficiently long before, or even at the time if you give it intravenously. Personally I think a fourth of a grain of morphine will do much more to prevent chills from urethral instrumentation than urotropin.

It is much better, in my opinion, to alkalize the patients with acute bladder symptoms before giving urotropin. Put the bladder at rest with some form of opium and wait until the acute symptoms have subsided before urotropin administration.

In the past we have been too prone to accept these untried urinary antiseptics as a cure-all for infections of the urinary tract when, as a matter of fact, the offending infection was due to an undiscovered urinary obstruction.

I enjoyed Dr. Livermore's paper a lot.

DR. C. F. ANDERSON (Nashville): Mr. Chairman and Gentlemen of the Society: I, too, had the privilege of reading Dr. Livermore's very excellent paper. I did not write my discussion because I felt there was absolutely nothing that I could add to his paper. Dr. Livermore in his characteristic way has taken an old, dry subject and made it very interesting.

There are just two or three little points of which I would like to speak. I agree with him and Dr. Barry and with all the urologists, I think, that we have no urinary antiseptic of any particular value. I do think that urotropin in large doses and preferably given intravenously is certainly the best one that we have.

Dr. Livermore has a new action to me of urotropin, that it produces antibodies. I did not know that. I thought it depended altogether upon the liberation of formaldehyde. If it produces little antibodies, maybe afterwhile they will get grown-up and we can do a little bit more with our urinary antiseptics.

There is just one word of warning that I might give at this time. I think all of the urinary antiseptics, including urotropin, are used much too often without a complete diagnosis. The practice of finding a patient with some bladder symptom and some pus in the urine and putting him on a urinary antiseptic is very dangerous. A complete diagnosis should be made by a thorough urological examination before you put them on any urinary antiseptic. There may be some process going on that will destroy a whole kidney while you are fooling with the almost worthless urinary antiseptic.

So far as urotropin helping to prevent chills and fever after instrumentation, I believe that the best thing to prevent chills and fever is gentleness and kindness to the urinary tract during your examination. I believe that will probably answer the doctor who said urotropin was his insurance policy

against a chill after manipulation. He probably had never had as good urologists as Dr. Livermore do his instrumentation. I am sure that that had more to do with the prevention of the chill than the giving of a remedy.

I have enjoyed Dr. Livermore's paper very much and am very glad to have been here to hear it.

DR. G. MADISON ROBERTS (Chattanooga): When I started to discuss that other paper a while ago, I was a little nervous because the battle in Knoxville had just died down so I forgot my notes.

I think we should be thankful that we have not a perfect urinary antiseptic. If we had a perfect urinary antiseptic, we would be treating malformations and anatomical defects brought on by disease with antiseptics without investigation of their cause and I think it is a blessing to the medical profession that we have no perfect urinary antiseptics.

Urinary antiseptics supposedly have three purposes. One is prophylactic, another is palliative, and another is therapeutic or curative. Just where either one of those is to be used will depend on the pathology that is present.

I am surprised to see so many young physicians, in addition to the older practitioners, constantly using urotropin in five-grain doses three times a day. I am further surprised to see them prescribing, as I saw one the other day in consultation, potassium citrate, sodium phosphate, and urotropin. Now just where he started with his antiseptic, just where he expected to get his acidification of the urine using the sodium citrate was a puzzle to me. I asked him why he did that, and he said that he was always taught to give potassium citrate in all urine that was burning, first, and that urotropin was for the purpose of curing the condition. I can see no reason why the general impression should exist among physicians that acid urine will cause burning. The reverse is true. If you take a case of highly alkaline urine, you are going to have an irritation. You add a lot of alkalis to it, and you are going to increase the irritation. It is all right to alternate between acids and alkalis for the purpose of rendering the urine a bacteriostatic agent, but not for the purpose of getting any antiseptic value by rendering the urine alkaline, or reducing any burning that you think you have.

As a matter of fact, I have found that by highly acidifying the urine and producing a temporary acidosis and thereby increasing the beta-oxybutyric acid in the urine, you will get a better result than from the synthetic urinary antiseptics.

I cannot give credit for what I am going to say, but in the last eighteen months I saw an article for heroic doses of nitrohydrochloric acid given as a urinary antiseptic in colon bacilli infection, and I believe I have not found anything that has given me so universal satisfaction as the use of that drug. I usually prescribe it in portions of four drams of the concentrated nitrohydrochloric acid in four ounces of water given in teaspoonful doses in a full glass of water about three times a day.

There is no objection, if you wish at that time to supplement this by the use of urotropin, but I have not had this to do.

I had one case in which I felt sure I was going to lose a patient on whom I had just done a suprapubic. This patient would not tolerate an indwelling catheter, and the day that I did the suprapubic on him he developed in the afternoon of that day a chill which I attributed to a pyelitis. I continued all kinds of urinary antiseptics, large quantities of water, over a period of ten days, and the patient was apparently going out. I was so forgetful of all rules of intravenous therapy that I was willing to try our good friend Dr. Shropshire's intravenous hydrochloric acid, and to my surprise the next morning this patient's temperature, which had been going from 102 to 104, followed as often as twice a day with a chill, was normal and never went above normal after that, and five days later he was able to leave the hospital. I do not recommend the intravenous use of hydrochloric acid, however, I am not in a position to condemn it. The case cited above speaks for itself. Sometimes we find physicians recommending and quoting other physicians on the value of urinary antiseptics without any personal clinical basis for their statement, and we are glad to hear Doctor Livermore so forcefully come out and state the truth, however, I am afraid that the continued exploration of urinary antiseptics by the detail men will postpone the acceptance of his statement for several years to come.

I appreciate this paper very much.

DR. J. B. NEIL (Knoxville): I would like to compliment the doctor's paper and say just a few words. I would like to disagree with him on the fact that mercurochrome is not irritating. I have had a great many patients who could not tolerate mercurochrome and to whom it was a violent irritant. On the other hand, I will say, though, that in a case in the Knoxville General Hospital the resident did a vasotomy and a vas puncture and misunderstood me and injected twenty-five cubic centimeters of a twenty-five per cent solution of mercurochrome into the seminal vesicles. I told him twenty-five cubic centimeters of three per cent. I expected that man to have all kinds of trouble, but to my great surprise he did not. He did have a lot of irritation, though, in the posterior urethra, but he had no untoward effects following the enormous dose of mercurochrome.

Another point is on the treatment of acute gonorrhea, in which Dr. Livermore stated that he was alternating this treatment of acriflavine and so forth with irrigations of permanganate of potash. I would like to know at exactly what stage of the disease he uses irrigations of permanganate of potash. I think it has been definitely proven that the wall tank with permanganate of potash in the early stage of gonorrhea is one of the worst things that can be done, the old so-called Valentine method of treatment.

I think that we have all overtreated gonorrhea. We have not considered how nature would cure this disease. I think we have overlooked that in a great deal of medicine—how nature would cure, and assist nature in the cure of disease.

Another point I would like to make is that Blumer of Philadelphia, a biochemist, has proven definitely that the urine changes from acid to

alkali three times a day; at the height of digestion the urine becomes strongly alkaline, immediately following this a large quantity of hydrochloric acid is secreted from the stomach and the urine immediately becomes acid. This is nature's way of controlling infection in the genitourinary tract. We cannot improve on nature. For years we have been using alkali; we keep the patient on alkali for ten days, then switch to acid for ten days. Recent opinions are to keep the urine strongly acid with ketogenic diet, or mandelic acid, for twelve days. We did not know why we were doing it, but that is the way nature took care of infection. If we will just remember these things, I think we will be better off.

DR. GEORGE R. LIVERMORE (closing): I did not say that urotropin intravenously produces antibodies. I said that I thought perhaps there was some reaction in the blood, either increase in antibodies or vaccine reaction, or something, that was responsible for the antiseptic effect that it produced rather than the liberated formaldehyde, as I did not believe that we could get enough formaldehyde liberated in living tissues to kill the organisms without damaging the tissues.

With regard to urotropin intravenously in the control of rigors and fever following instrumentation or following resection of the prostate, I have found it very satisfactory. All I ask you to do is try it. Dr. Folsom down at Dallas told me that it was not any good. I said, "Well, go try it." He went home and tried it on a series of cases—he tried fifty cases without it and fifty cases with it, and he had temperature charts made of them, and he came back at the next meeting and discussed my paper and showed his charts and said he was a convert to urotropin intravenously. All I ask you to do is to try it. It is not a cure-all. You never have found anything in medicine yet that was, but it certainly is a help.

Dr. Neil misunderstood me. I did not say that mercurochrome in the bladder was not irritating. I said it was irritating and sometimes the patient had to be catheterized because he could not urinate. It acts as an irritant or causes spasm of the internal sphincter and the patient cannot void.

In regard to the treatment of gonorrhea with permanganate of potash, I quote no less an authority than Pelouze, who I think probably is the outstanding man on gonorrhea in the United States. He uses it in all stages, acute and chronic, in 1-6,000 solution.

Our friend, Charlie Anderson of Nashville, says it is the gentleness that counts. I agree with him that in treating these cases you must be gentle and not force the solution in with an irrigator up eight or ten feet above your patient. Pelouze puts it about two feet above the level of the penis and he does not use any force, he does not try to make it break down resistance of cutoff muscle. He allows it to flow in the urethra very, very gentle, and then as the patient becomes more accustomed to it and the irritation subsides, the patient will learn to relax his cutoff and allow it to flow into the bladder. Gentleness and mild solutions are the most important considerations in the treatment of gonorrhea.

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OF THE

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H. H. SHOULDERS, M.D., Editor and Secretary

NOVEMBER, 1936

EDITORIAL

SOUTHERN MEDICAL ASSOCIATION

The Southern Medical Association meets in Baltimore, Maryland, November 17-20, 1936. All the evidence that has come to our notice indicates that this will be an exceptionally good meeting. Its scientific program likely will not be excelled anywhere. This applies to the scientific papers as well as the scientific exhibits.

Southern doctors should derive many satisfactions from their membership in the Southern and from an attendance on its meetings.

The criticism is heard that many of our national meetings are so large that an individual is handicapped in getting the full benefits available from such meetings.

The Southern has grown to where this may be offered as an objection, however this same objection can be offered to medical literature and to all the rest that pertains to medical learning. No one mind can comprehend it all, but each in his own way will gain information from attendance on these meetings and oftentimes he will get something else of even greater importance—he will get a stimulus which urges him on to higher endeavors. We all need stimulation at times, so the bigness of the meeting may be objectionable in a way, but one must not try to learn everything at the one meeting.

THE INCOMING LEGISLATURE

Members of the medical profession of Tennessee have for some years appreciated

the fact that the Medical Practice Act in Tennessee needs revision.

A revision was prepared two years ago for presentation to the general assembly, but it was not presented for the reason that some powerful force connected with the legislature advised against it.

The House of Delegates took occasion at the meeting in April this year to urge the legislative committee to go forward with this bit of legislation when the legislature meets in January, 1937.

A very specific reason for this action is presented in some recent developments in connection with the control of narcotics in the United States.

A request for the revocation of the licenses of some physicians in Tennessee came from no less a person than the Secretary of the Treasury of the United States in whose department the Federal Narcotic Act is administered.

The following paragraph is taken from a letter recently received from Dr. William C. Woodward, director of the Bureau of Legal Medicine and Legislation of the American Medical Association:

"Without the aid of the state, the secretary cannot prevent the offending physicians from continuing in practice; for just so long as physicians are licensed by a state, just so long are they entitled, *as a matter of legal right*, to registration under the Federal Narcotic Act; and just so long as they are registered under that act, just that long can they purchase the narcotic drugs that the act covers, and administer, dispense, and prescribe them with constant opportunities for diverting them into improper channels and uses. The remedy for the situation is vested solely in the state, which alone can suspend or revoke the licenses that it has granted."

It is observed that certain rights, privileges, and responsibilities attach to a license to practice medicine. When one is remiss as regards the responsibilities involved it is nothing but right that the privilege be withdrawn.

The public has often been in error in assuming that the medical profession sought a medical practice act in order to benefit

doctors. Nothing is further from the truth. Every medical practice act that has ever been adopted at the request of the medical profession had as its primary purpose the improvement of services to the public and it has no relationship to the income of doctors whatsoever.

It should be understood that the organized profession of medicine holds no brief and entertains no sympathy for those who abuse the privileges attached to a license to practice.

It is sincerely hoped that the amendments to the Medical Practice Act can be passed without wrangle and misunderstanding.

POSTGRADUATE EDUCATION

It can now be announced that a postgraduate course in obstetrics will be launched in Tennessee at a very early date.

This course is financed by the following contributing agencies: The Commonwealth Foundation, the Tennessee State Medical Association, the Department of Public Health of Tennessee, Vanderbilt University Medical School, and the Medical College of the University of Tennessee.

The course will be under the direction of a committee composed of the following: Drs. J. R. Reinberger, O. S. Warr, F. B. Bogart, J. O. Manier, J. B. Youmans, J. M. Lee, and O. W. Hyman.

An instructor has been selected. In fact, all of the personnel necessary to the conduct of the work have been selected.

This committee has encountered several difficulties. A great deal of time has been devoted to the matter of selecting a person suitable for the position of instructor. The time, while apparently long, was well spent for the simple reason that the time factor was not the major factor.

The obstetric practice in Tennessee is not so bad as to require immediate or precipitated action. Time devoted to sound planning and the selection of the proper personnel was well spent. This is a project designed for the benefit of the rural and small-town practitioners, or, it would be more accurate to say, it was designed for the benefit of the women who reside in

towns and rural communities. The benefits will reach them through the medium of the practitioners of medicine in their communities.

It is sincerely hoped that the profession at large will give the committee every co-operation.

Such work has been done in Virginia and Alabama and everybody in each of the states seems highly pleased with the results.

THE TEACHING OF MEDICAL ETHICS IN MEDICAL SCHOOLS

The medical profession, in general, has been critical, and at times justly so, of the knowledge the recent graduate in medicine possesses on the subject of medical ethics. The criticism has been directed, very largely, at the medical schools for the reason that medical schools have not made it a point to stress the subject. Students have graduated with a superior knowledge of the science of medicine and with a limited knowledge of the ethical principles involved in the practice of medicine.

There is one noteworthy sign of change in this respect. Dr. James Alexander Miller gave as his opening address to the medical students at the College of Physicians and Surgeons in New York City a lecture on "Art and Science of Medicine." He did not detract from the science of medicine in his effort to direct the attention of students to the ethical principles which underlie the whole structure of medical practice. He took occasion to quote from the first paragraph of the Principles of Ethics, as follows:

"Our profession has for its prime object the service it can render humanity; reward or financial gain should be a subordinate consideration. The practice of medicine is a profession. In choosing this profession an individual assumes an obligation to conduct himself in accord with its ideals."

The following paragraphs are taken from the address:

"When you graduate each of you become automatically a unit in that body known as organized medicine, which is represented by the county, state, and national associa-

tions. There are many other medical societies, and it has become much the fashion to prefer their activities to the neglect of those of organized medicine. This is very unfortunate, for the organized societies are those which officially interpret the relations of members of the profession to each other and to the community at large. In these days of change and unrest many new problems arise, and if they are to be solved in accordance with our professional ideals, those who stand for these ideals must take their share of responsibility for their maintenance.

"For the profession as a whole the questions of medical ethics and economics which we are today discussing are largely in the hands of these organized societies supposed to represent the collective body of opinion of physicians. If the leaders of the profession in their individual communities neglect their group responsibility there is a real danger that the best thought of the profession may not be adequately expressed.

"Organized medical societies are not trade unions. While it is a part of their duty to uphold the rights and privileges of the medical profession, their main responsibility is to maintain for the profession the standards of practice, of conduct, and of service to humanity which we profess.

"It is from groups of students like yourselves that we look for the future leaders in medicine. I trust that in the midst of the busy lives ahead of you many of you will find time to meet these responsibilities to the profession as a whole."

The address is too long to be reproduced. It may be found in the October *Bulletin* of the American Medical Association.

This school is to be congratulated and commended upon its effort to start the student off in medicine with some definite conception of what is involved in medical ethics.

CANCER MORTALITY

Statistics show that the mortality from cancer is on the increase. Some authorities have attempted to explain this increase on

the ground that the lives of more people are lengthened to such an extent that more people are living in the cancer age groups than was the case a decade or so ago.

Dr. Frederick L. Hoffman, who has been a student of the cancer problem for many years, presents figures to indicate that cancer is on the increase and that the increase is proportionately greater in the later decades of life—that is to say, in relationship to the number of people living in that group. These figures are of interest and are stimulating.

Some new explanation must be found for these developments. The fact that more people live to a more advanced age does not explain it. The hereditary factor is yet under strong suspicion. This factor, plus some one or more other factors, may operate to determine the incidence of cancer.

FEDERAL RESETTLEMENT ADMINISTRATION AND MEDICAL RELIEF

In the October issue of the *Bulletin* of the American Medical Association a discussion appears, under the heading given above, of some events that have taken place in North Dakota.

The Federal Resettlement Administration, it seems, has caused to be formed an organization known as the Farmers' Mutual Aid Corporation. This corporation can secure loans from the federal government for the purpose of carrying on various activities.

It is stated that only clients of the Resettlement Administration will be accepted to membership in the corporation.

Article II of the articles of incorporation reads, in part, as follows: "The nature of the business of the corporation and the objects and purposes for which, or for any of which, this corporation is formed are:

(a) To associate its members together for their mutual benefit and to further the rehabilitation of said members, and to that end to engage in any activity involving or relating to the obtaining for its members of medical and or dental treatment and services, and any surgery, nursing or hospi-

talization incident, necessary or convenient thereto.

(b) . . . and to make provision for the payment of, and to pay bills rendered to its members by physicians and dentists duly licensed to practice medicine or dentistry in the State of North Dakota, or by other individuals or corporations rendering services to or supplying property to its members, such provision for payment and/or payment (sic) to be made upon the terms and conditions set forth in the by-laws. . . ."

The number of people who are members of the corporation is not shown, nor is there any statement showing the possible membership the organization may attain to. The possibilities involved are broad and far-reaching. It is important that the medical profession observe developments.

DEATHS

Dr. E. L. Gleaves, Nashville; University of Nashville, Medical Department, 1898; aged 70; died November 1 after a short illness.

RESOLUTIONS

DR. L. A. PARKER

Dr. L. A. Parker was born in Hardin County, Tennessee, near Saltillo, January 27, 1876, and died in Saltillo, Tennessee, September 27, 1936. He graduated from the Medical Department of the University of Tennessee in 1900, and practiced medicine continuously in Saltillo until his death. He married Miss Gloria Keeton of Wayne County, Tennessee, from which union one son, Wallace Parker, was born.

The passing of Dr. Parker removes from our county and community one of its most eminent practitioners, and deprives the medical profession of one of its most valued members. His many friends have every reason to mourn his loss and will receive the sad news of his death with great sorrow.

Those of us who had the opportunity to know Dr. Parker intimately learned to love and to admire him, and were impressed with his standards as a man, his wisdom, his kindness, his sincerity, his noble sentiments, and his skill as a physician. He was a fine Christian gentleman, who held the love and esteem of his patients and many friends.

He was a devoted husband, father, and friend and was always ready to give his honest and helpful counsel to the younger men of his loved profession.

In recognition of these noble attributes, the Five-County Medical Society extends to the family and relatives of Dr. Parker its deep sympathy in their loss.

We will miss his counsel, his helpful assistance and above all the example he set by his careful conscientious work as a physician.

Be It Resolved, That a copy of these resolutions be sent to the family of our deceased brother, also a copy to the JOURNAL of the Tennessee State Medical Association, a copy to the Hardin County newspaper, and that a copy be spread on the minutes of the Five-County Medical Society.

(Signed)

C. C. STOCKARD, M.D.,

D. L. WOODS, M.D.,

W. L. DANLEY, M.D.,

Committee.

DR. WILLIAM CAPELL DUCKWORTH

After a short illness Dr. William C. Duckworth of Jackson died August 19, 1936.

William Capell Duckworth was a graduate of Vanderbilt University, Medical Department, class of 1900, and practiced his profession in Jackson from his graduation until his death. He was a past president of this society and so long as he lived attended its meetings regularly, participating in its work and programs where his ability and judgment were respected and his presence welcome. He served one year as vice-president of the Tennessee Medical Association, was a member of the staff of the Memorial Hospital, vestryman in the Epis-

copal church, and local surgeon of the G. M. & N. R. R.

Dr. Duckworth was indeed the "good physician" to the people he served, a comforting friend in sorrow and trouble, deserving the devoted affection his patients felt for him.

We of the medical profession miss him from our midst, and feel that in the death of this quiet, faithful, and wholly trustworthy comrade each of us has lost a friend and our profession a representative who exhibited in his life before the people the best attributes of a calling devoted to the good of mankind by rendered service.

He was an exemplary citizen, law abiding and upright in his dealings with all with whom he came in contact.

In paying this tribute to our friend and colleague we would not fail to express to his wife and children the profound sympathy we feel for them in their sorrow. We pray that time will soften the loss and deal gently with them in their bereavement.

We move, Mr. President, that this resolution may be spread upon the minutes of our society and a copy sent to the family.

HERMAN HAWKINS,
W. G. SAUNDERS,
G. W. BRASHER,
Committee.

NEWS NOTES AND COMMENTS

Dr. Harry W. Hollingsworth, Anthras, has moved to Devonia.

Dr. Paul Mapother of Louisville, Kentucky, who for the past few months has been associated with Dr. McEver of Pruden, has gone to Black Mountain, Kenvir, Kentucky, to be associated there with Dr. Gianini.

As a little confidential information among members of the Knox County Medical Society the secretary has been instructed to place on the bulletin the names of those who bankrupt their doctor bills. Other counties might follow this example.

WOMAN'S AUXILIARY

President-----Mrs. Theodore Morford
Nashville
President-elect-----Mrs. W. T. Black
Memphis
Press and Publicity-----Mrs. Oscar Nelson
Nashville

News from over the state augurs well for a splendid year. It is fine to learn of meetings and parties, of plans for studies and activities. It is a real joy to come to know of the work and pleasures of the different groups. Let us make this column a meeting place where we can get to know each other.

SHELBY COUNTY

The Woman's Auxiliary to the Memphis and Shelby County Medical Society had a most successful first meeting of the fall at University Center with a splendid attendance. Mrs. W. T. Braun, the incoming president, presided and it was a matter of great joy and congratulations that she had recovered from her automobile accident of last spring and was able to take up her work with the auxiliary. Other new officers are: Mrs. Edward Clay Mitchell, president-elect; Mrs. Edward G. Thompson, first vice-president; Mrs. J. B. McElroy, second vice-president; Mrs. H. F. Crawford, third vice-president; Mrs. John T. Moss, fourth vice-president; Mrs. W. C. Chaney, recording secretary; Mrs. Emmet Hall, corresponding secretary; Mrs. Chester Allen, treasurer; Mrs. O. W. Hyman, parliamentarian; and Mrs. O. P. Walker, historian. Mrs. W. T. Black, program chairman, read "What an Auxiliary Member Should Know," "How Does a Member Support Her Auxiliary," and an amusing little article "Nine Ways of Working an Auxiliary." After the business meeting a delicious luncheon was served by Mrs. Otis Warr.

KNOX COUNTY

The first meeting of the auxiliary to the Knox County Medical Society was held on October 7 at the home of Mrs. W. A. Shelton with an attendance of forty-three. It is the delightful custom of this auxiliary

to meet in the homes of the members. Plans were made for a benefit bridge to be given on October 21 at the Andrew Johnson Hotel. Dr. R. B. Wood gave a very interesting paper on "The Heart."

RUTHERFORD COUNTY

The Woman's Auxiliary to Rutherford County and Stones River Academy of Medicine held its first meeting of the new season at the home of Mrs. Sidney Smith of Salem. The president, Mrs. Matt Murfree, presided over the business session. Mrs. J. B. Black, program chairman, introduced as the speaker Mrs. Annie Youree, who talked on the life and work of Dr. C. W. Bull, noted Tennessee scientist, whose chief contribution was his work with the Welch bacillus. Mrs. Youree also gave a brief history of the Stones River Academy of Medicine, naming some of the doctors who were practicing before the War Between the States. Mrs. Clyde Reagor, soprano, sang "Mavis," by Craxton, and "Autumn," by Matthews. Mrs. Harry Gannaway was the accompanist. Refreshments were served at the conclusion of the meeting. "The Contributions Women Have Made to Medicine" was the study theme chosen for the year.

DAVIDSON COUNTY

The Woman's Auxiliary to the Nashville Academy of Medicine and Davidson County Medical Society gave a membership tea at the home of Mrs. W. W. Wilkerson, Curtis Woods Lane, on October 9. Arrangements were in the hands of the membership committee, Mrs. Fowler Hollabaugh, chairman, and the hospitality committee, Mrs. Cleo Miller, chairman. Mrs. Frank Fessey was in charge of flowers and decorations. Mrs. O. G. Nelson, president, and Mrs. W. W. Wilkerson, hostess, received the guests. Occasional music was rendered by Mrs. Harvill Hite, Mrs. A. L. Erwin, Mrs. Bruce P'Poole, and Mrs. C. S. McMurray. Mrs. George H. Price, Mrs. J. T. Altman, Mrs. L. H. Tanksley and Mrs. A. N. Hollabaugh poured tea from a beautifully-decorated tea table. They were assisted in serving by Mrs. R. L. Dozier, Jr., Mrs. B. F. Byrd,

Mrs. Theodore Morford, Mrs. P. G. Morrissey, and Mrs. Harvill Hite.

MEDICAL SOCIETIES

Campbell County:

The Campbell County Medical Society met in the Glanmorgan Hotel in Jellico, October 28. Dr. Tom Barry of Knoxville read a paper on "Urology in General Practice." The paper dealt with the common urological cases one meets with in private practice with a very practical suggestion on the simple handling of the early stages of these conditions. The beginning symptoms of the more serious conditions were outlined which was most instructive. The imperative need of doing something for these cases in the early stages besides merely giving sedation was thoroughly explained. The society is very grateful to Dr. Barry for the most instructive talk it has had in some months.

Members present were Drs. J. L. Heffernan, R. W. Lewis, Joseph McCain, S. S. Brown, and R. J. Buckman.

Dr. Leshner accompanied Dr. Barry from Knoxville.

(Signed)

R. J. BUCKMAN, *Secretary.*

Davidson County:

October 13—"Treatment of Congestive Heart Failure," by Dr. Tinsley Harrison. Discussion opened by Dr. W. H. Witt. Case report: "Meningitis Complicated with Gas Bacillus Infection," by Dr. J. T. Gilbert. Discussion opened by Dr. W. R. Cate.

October 20—"Report of Cases," by Dr. R. A. Barr.

October 27—"A Study of Blood Pictures in Leukemias in 455 Patients Over a Period of Fifteen Years," by Mr. J. J. Hooberry. Case report: "Concretio Cordis," by Dr. O. N. Bryan. Discussion opened by Dr. Alfred Blalock. Case report: "Spina Bifida," by Dr. Henry Douglass. Discussion opened by Dr. T. D. McKinney.

November 3—"A Common Lesion of the Cervical Spine Responsible for Segmental Neuritis," by Dr. Edward L. Turner. Dis-

cussion opened by Dr. George K. Carpenter. Case report: "Encephalitis," by Dr. W. R. Cate.

Dyer, Lake, and Crockett Counties:

Dyer, Lake, and Crockett Counties Medical Society met in regular monthly session.

Scientific program:

"Gas Gangrene," by Dr. Battle Malone, Memphis.

"Focal Infection in the Nasopharynx," by Dr. W. D. Stinson, Memphis.

"Where Is the Middle of the Road in Gastrointestinal Allergy," by Dr. W. C. Chaney, Memphis.

Thirty-two were present.

C. L. DENTON, *Secretary*.

Giles County:

Dr. J. U. Speer, Pulaski, was the principal speaker before the Giles County Medical Society, October 22.

Hamilton County:

November 19—"Migraine," by Dr. Chas. R. Thomas.

November 26—Thanksgiving.

December 3—Election of officers.

December 10—Memorial meeting.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

The Five-County Medical Society met in Waynesboro on October 27. The following papers were read:

"Skull Fracture with Presentation of the Case," by Dr. C. V. Stephenson, Centerville. Discussion opened by Dr. C. C. Stockard, Lawrenceburg.

"The Importance of Attending Your Local Medical Society Meetings," by Dr. W. L. Williamson, Memphis, president of the Tennessee State Medical Association.

"Laryngeal Diphtheria," by Dr. S. M. Herron, Jackson. Discussion opened by Dr. Frank H. Norman, Waynesboro.

Knox County:

October 20—"Medical Economics," by Dr. H. H. Shoulders, Nashville.

November 3—"Surgery of the Sympa-

thetic Nervous System," by Dr. T. D. McKinney, Nashville.

November 10—"Appendicitis," by Dr. Richard Barr, Nashville. "The Medical References in the Works of Shakespeare," by Dr. W. H. Witt, Nashville.

Rutherford County and Stones River Academy of Medicine:

Dr. R. W. Billington of Nashville addressed the Rutherford County and Stones River Academy of Medicine at their regular monthly session on October 14.

Dr. Billington's subject was "Injuries of the Knee Joint."

Sullivan-Johnson Counties:

Dear Dr. Shoulders:

In reply to your letter in regard to the activities of our society, I want to submit the following report:

"There has been a decided increase in the interest and activities in our society in the last two years. This has been due to a large extent to the efforts of our program committee and to the aid in supplying these programs furnished by the Commonwealth Fund of New York. This aid has enabled us to have four programs during the year supplied by invited speakers.

"The program committee has worked out a varied educational program for the year which embraces practically every subject of special interest in the medical field.

"At our June meeting in Bristol we were fortunate to secure Dr. Michael L. Mason of Northwestern University of Chicago to give us a most practical discussion of the common condition 'Infections of the Hand.' Appearing on the same program was Dr. R. C. Derivaux of Vanderbilt University of Nashville, who discussed very ably the subject, 'Recent Advances in the Management of Diabetes Mellitus.'

"Our custom is to have a vacation during July and August.

"At our September meeting in Kingsport the medical-legal program was presented by Mr. John Ed O'Dell of Bristol, whose subject was 'Medical Evidence in Criminal

COMMITTEES

The following is a list of the standing committees of the Tennessee State Medical Association provided for in the constitution and by-laws and appointed by the proper authority, together with some special committees appointed under the authority of a resolution by the House of Delegates.

Some of the committees are appointed for a definite period. In such instances the appointment of the committeeman expires with the meeting of the House of Delegates in the year stated opposite his name.

COMMITTEE ON SCIENTIFIC WORK

H. H. Shoulders, Chairman, Nashville.
A. F. Cooper, Memphis.
Frank Harris, Chattanooga.
A. H. Lancaster, Knoxville.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

L. W. Edwards, Chairman, Nashville (1939).
E. W. Cocke, Bolivar (1941).
Battle Malone, Memphis (1940).
Tom Barry, Knoxville (1938).
T. R. Ray, Shelbyville (1937).

LIAISON COMMITTEE

W. C. Dixon, Chairman, Nashville (1941).
W. P. Wood, Knoxville (1940).
Hiram A. Laws, Chattanooga (1939).
Tom Mitchell, Memphis (1938).
J. L. Raulston, Knoxville (1937).

STATE TUBERCULOSIS HOSPITAL COMMISSION

W. S. Rude, Chairman, Ridgeway.
O. N. Bryan, Nashville.
C. M. Oberschmidt, Memphis.
J. L. Hamilton, Chattanooga.

HOSPITAL COMMITTEE

D. R. Pickens, Chairman, Nashville.
E. H. Baird, Dyersburg.
H. Quiggs Fletcher, Chattanooga.
Kyle Copenhaver, Knoxville.
H. B. Everett, Memphis.
Lee Gibson, Johnson City.

COMMITTEE ON INSURANCE

A. F. Cooper, Chairman, Memphis.
C. M. Hamilton, Nashville.
S. R. Miller, Knoxville.

COMMITTEE ON MEDICAL DEFENSE

S. R. Miller, Chairman, Knoxville.
H. B. Everett, Memphis.
H. M. Tigert, Nashville.

ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

Dr. W. P. Wood, Chairman, Knoxville.
Dr. W. M. Searight, Memphis.
Dr. L. W. Edwards, Nashville.

SUPERVISORY COMMITTEE

(Representing the Tennessee State Medical Association)

J. R. Reinberger, Memphis.
O. S. Warr, Memphis.
F. B. Bogart, Chattanooga.
J. O. Manier, Nashville.

COMMITTEE ON EDUCATION

O. S. Warr, Chairman, Memphis (1938).
R. B. Wood, Knoxville (1938).
W. G. Kennon, Nashville (1937).
J. Marsh Frere, Chattanooga (1937).
W. O. Baird, Henderson (1939).
J. M. Lee, Nashville (1939).

The following committees are expected to serve under the supervision of the Committee on Education:

(A) COMMITTEE ON MATERNAL WELFARE

J. R. Reinberger, Chairman, Memphis.
M. S. Lewis, Nashville.
H. B. Hewitt, Chattanooga.
Andrew Smith, Knoxville.

(B) COMMITTEE ON CHILD WELFARE

W. D. Anderson, Chairman, Chattanooga.
Oliver Hill, Knoxville.
H. G. Bradley, Nashville.
W. L. Rucks, Memphis.

(C) CANCER COMMITTEE

Ralph Monger, Chairman, Knoxville.
S. J. Sullivan, Cleveland.
Howard King, Nashville.
H. S. Shoulders, Nashville.
J. W. McClaran, Jackson.
Frank Smythe, Memphis.

(D) COMMITTEE ON PHYSICAL THERAPY

A. H. Meyer, Chairman, Memphis.
W. E. Van Order, Chattanooga.
J. F. Hamilton, Memphis.
R. W. Billington, Nashville.
J. P. Gilbert, Nashville.

LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. W. L. Williamson, 915 Madison Avenue, Memphis.

Vice President for West Tennessee—Dr. J. E. Powers, Jackson.

Vice President for Middle Tennessee—Dr. J. O. Walker, Franklin.

Vice President for East Tennessee—Dr. Lee K. Gibson, Johnson City.

Secretary—Editor—Dr. H. H. Shoulders.

Assistant Secretary—Editor—Dr. W. M. Hardy.

TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.

Dr. A. F. Cooper, Goodwyn Institute Building, Memphis.

Dr. E. R. Zemp, Walnut Street, Knoxville.

Dr. Franklin B. Bogart, Medical Arts Building, Chattanooga.

Dr. John B. Steele, Volunteer Building, Chattanooga.

COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.

Second District—Dr. S. R. Miller, Knoxville.

Third District—Dr. Hiram A. Laws, Jr., Chattanooga.

Fourth District—Dr. J. T. Moore, Algood.

Fifth District—Dr. John W. Sutton, Petersburg.

Sixth District—Dr. L. W. Edwards, Nashville.

Seventh District—Dr. C. D. Walton, Mt. Pleasant.

Eighth District—Dr. J. R. Thompson, Jackson.

Ninth District—Dr. E. H. Baird, Dyersburg.

Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—

Dr. E. G. Wood, Knoxville; East Tennessee.

Dr. H. H. Shoulders, Nashville; Middle Tennessee.

Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—

Dr. E. T. Newell, Chattanooga; East Tennessee.

Dr. J. O. Manier, Nashville; Middle Tennessee.

Dr. E. C. Ellett, Memphis; West Tennessee.

OFFICERS OF COUNTY MEDICAL SOCIETIES

COUNTY	PRESIDENT	VICE PRESIDENT	SECRETARY-TREASURER
Anderson	Edward Dickson, Coal Creek	W. B. Barton, Briceville	J. S. Hall, Clinton
Bedford	Alfred Farrar, Shelbyville	J. W. Reed, Belfast	W. H. Avery, Shelbyville
Blount	L. C. Olin, Maryville	H. A. Callaway, Maryville	W. C. Crowder, Maryville
Bradley	J. L. McClary, Cleveland	W. C. Stansberry, Charleston	Claud Taylor, Cleveland
Campbell	A. A. Baird, Pruden	M. L. Davis, Caryville	R. J. Buckman, LaFollette
Carroll	E. W. Hillsman, Trezevant		J. H. Williams, McKenzie
Carter	E. T. Pearson, Elizabethton	J. B. Shoun, Elizabethton	E. L. Caudell, Elizabethton
Chester, Henderson, and Decatur	C. H. Johnson, Lexington	J. L. McMillen, Decaturville	L. C. Smith, Henderson
Cocke	Drew A. Mims, Newport	Chas. Ruble, Newport	J. E. Hampton, Newport
Cumberland	E. W. Mitchell, Crossville		V. L. Lewis, Crossville
Davidson	H. S. Shoulders, Nashville	H. L. Douglas, Nashville	J. P. Gilbert, Nashville
Dickson	L. F. Loggins, Charlotte		R. P. Beasley, Dickson
Dyer, Lake, Crockett	R. C. Newkirk, Tiptonville	John E. Frazier, Newbern (Dyer) R. W. Griffin, Tiptonville (Lake)	C. L. Denton, Dyersburg
Fayette-Hardeman	L. D. McAuley, Oakland	Leon Pope, Grand Junction	A. Richards, Bolivar
Fentress	C. A. Collins, Wilder	A. H. Crouch, Forbus	J. P. Sloan, Jamestown
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Maury	D. B. Andrews, Columbia	O. C. Fowler, Spring Hill H. C. Busby, Columbia	C. D. Walton, Mt. Pleasant
McMinn			David F. Seay, Englewood
McNairy	John R. Smith, Selmer	G. B. Curry, Selmer	H. C. Sanders, Selmer
Monroe	T. M. Roberts, Sweetwater	J. A. Hardin, Sweetwater	W. J. Cameron, Sweetwater
Montgomery	F. A. Martin, Cumberland City	R. M. Workman, Clarksville	Philip L. Lyle, Clarksville
Obion	W. B. Harrison, Union City	Har Glover, Union City	Frank B. Kimzey, Union City
Overton			A. B. Qualls, Livingston
Polk	W. Y. Gilliam, Copperhill	W. C. Strauss, Copperhill	F. O. Geisler, Isabella
Putnam	J. Fred Terry, Cookeville	W. A. Howard, Cookeville	Thurman Shipley, Cookeville
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Rutherford	J. D. Hall, Readyville	B. W. Rawlins, Murfreesboro	J. A. Scott, Murfreesboro
Scott			D. M. Woodward, Winona
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Williamson	R. H. Hutcheson, Franklin	Knox Galloway, Franklin	K. S. Howlett, Franklin
Wilson	L. L. Tilley, Lebanon	M. H. Wells, Watertown	R. B. Gaston, Lebanon

Cases and Malpractice Suits,' and Mr. Lynn E. Minter of Kingsport, who spoke on 'Medical Evidence in Compensation and Insurance Cases.'

"At our October meeting in Bristol, Dr. L. C. Cox of Kingsport discussed the subject of lymphomas and presented a very interesting case report. Dr. Nat H. Copenhaver discussed the recent advances in the management of diseases of the thyroid.

"We have secured for our November program, which will be in Bristol, Dr. Roderick Heffron of Boston, who will present the subject, 'Serum Treatment of Lobar Pneumonia.' Dr. James K. Hall of Richmond will talk on 'Functional Nervous Diseases.'

"At this time we have almost a 100 per cent paid up membership of our eligible physicians in the counties.

Yours very truly,
DR. T. R. BOWERS, *Secretary.*"

Washington County:

A meeting was held November 5 at Mountain Home, Tennessee. The following papers were read:

"The Value of Eye Examination to General Practitioner," by Dr. E. A. Lodge.

"Common Mental Condition in Ex-Servicemen," by Dr. C. M. Creech.

"Complete Heart Block with Presentation of Cases," by Dr. Frank Holecek.

"Arthroplasty with Case Reports," by Dr. Richard Walker.

OTHER MEDICAL SOCIETIES

VANDERBILT UNIVERSITY MEDICAL SOCIETY OCTOBER 2, 1936

1. Report of Case: "Lobectomy for Bronchiectasis," by Dr. Henry Carney.

Seventeen-year-old white boy who had a persistent cough for fifteen months productive of 175-200 cubic centimeters thick foul sputum. Lipoidol injection revealed a dilatation of the left main bronchus. August 3, 1936, under intratracheal anesthesia and following the removal of left seventh and eighth ribs and division of adhesions, the upper and lower lobes were separated and

pleural surfaces irritated with dry gauze. During the postoperative course it was necessary to withdraw 5.5 liters of fluid from left thorax. September 4, 1936, the chest was reopened and the lower lobe removed between tourniquets. Bronchi and individual vessels closed with catgut. Visceral pleura was used to cover the stump. During his convalescence a phrenicotomy and a thoracostomy were done to diminish the size of the cavity and care for the increase in drainage. At end of one month he is afebrile, has no cough or sputum and left upper lobe has reexpanded.

Case discussed by Drs. Blalock and McClure.

2. "Observations on a Pressor Substance Occurring in Renal Tissue," by Dr. J. R. Williams.

Using three different methods of preparation the amount of pressor substance has been investigated in four arbitrary divisions of the kidney—outer cortex, middle cortex, inner cortex, and medulla. It was found that, while there was a wide overlapping of the results, on the average in each case the outer layers contained more pressor substance than the inner.

Paper discussed by Drs. Morton Mason, Cunningham, and Harrison.

3. "The Value and Significance of the Complement Fixation Test in Amoebiasis," by Dr. Henry R. Meleney and Dr. William W. Frye.

The complement fixation test for amoebiasis is of aid in corroborating the finding of the dysentery amoeba in the stools, in diagnosing some cases of amoebiasis in which amoebae cannot be found, and in following the results of treatment. The test has shown that some cases of ulcerative colitis are amoebic in origin. Monkeys infected with the dysentery amoeba, but having no lesions in the intestine, gave negative complement fixation tests. Some persons having the dysentery amoeba in the stools also gave negative complement fixation reactions, and it is believed that such persons harbor the amoeba only in the lumen of the intestine without invasion of the tissues.

Paper discussed by Drs. Morgan, Goodpasture, Brooks, and Leathers.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

A Discussion of the Scope and Utility and Effective Pain-Relieving Agents in Obstetrics. T. B. Sellers and J. T. Sanders, *Current Researches in Anesthesia and Analgesia*, September-October, 1936.

It is no longer a debatable question whether amnesic, analgesic or anesthetic agents shall be used in obstetrics, but simply a question of selection. Nitrous oxide and oxygen, rectal and local, are mentioned, but they have their limitations. Sodium amytal seems to be ideal, but certain individuals possess an idiosyncrasy to it.

Nembutyl can be substituted for sodium amytal, as it is less toxic. A combination of nembutyl and paraldehyde comes nearer approaching the ideal than any other analgesic agent. Nembutyl is given orally as soon as labor is established followed in a half hour to an hour by rectal injection of paraldehyde in six to eight dram doses mixed with an equal amount of olive oil. Ethylene may be used in the second stage when relief from the above mixture is inadequate. In any operative procedure ether is the next choice.

DERMATOLOGY

By E. E. BROWN, M.D.
Doctors Building, Nashville

HAND LOTION

Frequently I have been asked by physicians, dentists, nurses, and others who must wash their hands often for a lotion that is practical and efficacious as well as inexpensive. The following formula will meet this requirement, but cannot be prepared extemporaneously. It should stand at least a week (several weeks would be better):

Acid, boric	-----	drams	5
Alcohol	-----	ounces	6
Glycerine	-----	ounces	16
Perfume	-----	drams	2
Water	-----	(Q. S.) ounces	32

Mix and add benzoin, drams 6. Allow to stand at least one week (three or four are better). Decant clear liquid and add gum tragacanth, 1½ drams. Use sparingly after washing hands.

Oral Desensitization to Common Foods. Beatrice M. Keston, Irene Waters, and J. Gardner Hopkins, *Journal of Allergy*, July, 1935.

They describe a method of desensitization to common foods that has been successfully used for five years, especially in children with chronic eczema.

The procedure for dilution is given. The first dilution is calculated to represent one milligram of protein. The dose is increased each fourth day. If symptoms recur the dose is decreased to correspond to twelfth to sixteenth day previous, and if they continue the desensitization is stopped until they subside.

Reprints containing food lists are available.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 316 Doctors Building, Nashville

Ergot and Ergotamine Tartrate for Puerperal Prophylaxis. John C. Tritsch, *New York State Journal of Medicine*, 36: 1160-1162, August, 1936.

Drugs and certain other measures employed by obstetricians following delivery in stimulating contraction of the uterus have the following objectives: (1) to prevent or control post-partum bleeding, (2) to hasten involution, and (3) to decrease the possibility of infection. Although Davis, Adair, and others have practically disclaimed any efficacy of the alkaloids of ergot administered by mouth as a result of their experiments, too much evidence has been accumulated favorable to ergotamine tartrate to dismiss it because of results obtained in what almost amounts to a laboratory procedure.

This study from the department of obstetrics of Metropolitan Hospital consists of 761 cases, all of which received the same aftercare, but for the purpose of determining the effect of ergot medication, this series was divided into three groups as follows: (1) control group, fifty-nine patients receiving no post-partum medication; (2) two hundred and two patients to whom aseptic ergot was administered intramuscularly following delivery of the placenta and one dram of fluid extract of ergot orally every four hours for three days; (3) five hundred patients receiving one cubic centimeter of ergotamine tartrate intramuscularly following delivery of the placenta and one tablet (1 milligram) of the same drug every four hours for three days.

Results: The necessity for additional medication to control excessive bleeding was greatest in the control group and least in the group receiving ergotamine tartrate. Involution was more rapid in the group receiving ergotamine tartrate and in this same group the morbidity was lower. Clinically, ergotamine tartrate appeared to possess greater efficiency as a puerperal prophylactic to decrease bleeding, favor better involution, and decrease liability to post-partum fever than the other ergot preparation used in this study.

Radium Irradiation for Benign Hemorrhage. Charles C. Morris and Charles A. Behney, *American Journal of Obstetrics and Gynecology*, 32: 661-673, October, 1936.

Radium irradiation is now generally accepted as the method of choice in treating certain types of uterine hemorrhage of benign origin. An en-

deavor has been made in this paper to point out that irradiation is not an ideal treatment, although it is thought to be the best for certain types of cases. Functional cases should be treated along the line of endocrine therapy and only after failure should irradiation be advised.

This study from the Gynecologic Division of the University of Pennsylvania Hospital reviews 1,437 patients treated by radium irradiation for benign hemorrhage, including 750 cases of functional hemorrhage and 687 cases of myomas. Indications for radium therapy for benign hemorrhage are: pathologic bleeding where conservative measures fail in patients near the menopause where other pelvic complications are absent; in the myoma group, patients having tumors not larger than a four months' pregnancy. Contraindications, dosage, and filters are discussed.

Prices which the woman who is subjected to irradiation instead of operation pays are that a proportion will suffer from discharge for six weeks to three months. Again they will have to subject themselves to regular follow-up examination. Fifty-nine per cent of 967 cases of functional hemorrhage and myomas showed menopausal symptoms. Satisfactory results were secured in eighty-three per cent of cases. The results in the myoma group were about the same as in the functional cases. Three per cent of cases developed relapses or complications requiring treatment ten or more years after irradiation.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

Report of an Unusual Ocular Injury. E. V. Edwards, American Journal of Ophthalmology, October, 1936.

The patient was riding in the front seat of an automobile when the brakes were applied in order to avoid hitting another car, and the auto skidded into a tree beside the road. The patient's next conscious moment was when he awakened in the hospital with a pain in the chest and some discomfort in the right eye.

The bridge of the nose was abraded and there were two small lacerations below the inferior orbital rim. There was no injury to the lids nor to the tarsal conjunctiva, and no subconjunctival hemorrhage of the globe. Vision was ability to count fingers at three feet.

On the nasal side of the right eye was a small, tumorlike mass that extended from the limbus almost to the inner canthus and lay beneath the conjunctiva. It appeared to be an intact lens. The iris had been stripped from its attachments and had prolapsed into the hernial sac with the lens.

Ophthalmoscopic examination revealed the media mildly cloudy, but sufficiently clear to permit the outlining of fundus details. There were no hemorrhages nor signs of inflammation in the retina. In the media were long waving shreds that ap-

peared to be attached to the margin of the hernial sac. No tear in the retina could be detected. The rupture of the eye was at the limbus on the nasal side and about six to seven millimeters long.

At operation the conjunctiva was incised at the base of the mass and the lens extracted in the capsule. There was no sign of injury to the capsule. The iris was picked up in the bottom of the hernial sac and lifted out, being completely freed from its attachments. A very slight amount of vitreous was lost. One silk suture was used to close the wound.

Summary.—The unusual features seen in this case are:

1. Vision about equal to any aphakic eye.
2. The almost total absence of inflammatory signs in the injured eye.
3. The complete prolapse of the detached iris and lens through a very small opening to rest beneath the conjunctiva bulbi without rupturing this membrane.

OTOLOGY, LARYNGOLOGY, RHINOLOGY

By W. W. POTTER, M.D.
Medical Building, Knoxville

Osteomyelitis of the Frontal Bone. Arthur C. Jones, M.D., *Annals of Otolaryngology, and Laryngology*, September, 1936, Vol. 45, Page 726.

In a résumé of the literature on this subject, the author finds that practically all agree that "osteomyelitis of the frontal bone is a progressive disease and its surgery must be timely and radical." He first takes up the anatomy that makes it possible for us to have this type of infection, and quotes from "Gray's Anatomy of the Human Body" on veins of the diploe and the emissary veins. There are many factors contributing to the etiology of osteomyelitis. The virulence of the organism and the resistance or immunity of the patient to the particular organism are the two principal factors involved. The most common organism is the staphylococcus pyogenes aureus. Most cases follow some nasal operation. He quotes Don McKenzie as follows: "A minor interference is most likely to leave behind it active suppurating foci in contact with the wound, and that osteomyelitis may follow such simple and restricted proceedings as the intranasal antrum operation, the intranasal frontal sinus operation, and even the curetting of an ethmoid for polypi." He quotes Furstenberg as saying that he has the feeling that septic thrombosis of the veins of the mucous membrane of the frontal sinus is the cause of osteomyelitis of the frontal bone, and says that Mosher has a pathological specimen to prove this. Most writers on this subject advise the radical type of surgery. Mosher, in his splendid article, advocates the desirability of going at least an inch above the involved area, and it is his opinion that once osteomyelitis has set in the only chance of saving

the patient lies in the immediate and entire removal of the diseased bone. The author advises that great care should be used in cleaning the wound by removing all infected, soft tissue. The X-ray is not of very much benefit in these cases. Mosher states the "X-ray is at least ten or twelve days behind the actual bone infection." The author advises a wide incision and sewing the flaps down in place after the very complete operative removal of all questionable bone.

He paints the dura with five per cent iodine and places a gutta-percha drain over the dura and brings it out at the lowest part of the wound. "Postoperative X-rays show definitely that we should have no fear about the regeneration of the bone in the cranial vault."

The author reports four cases with photographs showing results of the operation.

ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.

Medical Arts Building, Chattanooga

Asbestosis: A Roentgenologic Review of Seventy-One Cases. Shull, J. Rush, M.D., *Radiology*, Vol. 27, No. 3, September, 1936.

Asbestosis is defined as a disease of the lungs caused by the inhalation of asbestos dust and fiber. It is classified as a pneumoconiosis and is characterized by an early interstitial fibrosis with progression into a terminal diffuse fibrosis. This fibrosis begins primarily in the bases of the lungs, involving the peribronchial structures and the parenchyma of the lungs is comparatively uninvolved. Later in the course of the disease there is a filmy, hazy appearance of the lung fields which has been aptly called "ground glass appearance." The right side of the heart is enlarged in most advanced cases and may be enlarged in moderately advanced cases. The fibrosis is the result of chemical irritation caused by silica in the dust and of mechanical irritation by the asbestos fibers.

So-called "asbestos bodies" are found in the lungs of these patients. They are golden yellow crustationlike bodies occurring in the lungs of patients and their centers are composed of minute asbestos fibers.

The most striking symptom is dyspnea, which is progressive, slow, and insidious in development and is due to inelasticity of the lungs and interference with blood supply. Cough and expectoration may be absent except during bronchitic attacks. Anorexia, cyanosis, loss of weight, and emaciation are late symptoms and are usually out of proportion to the physical signs.

Autopsy findings consist of extensive fibrosis throughout both lungs with dense interlobar adhesions. The cut surface of the lung shows narrow white lines of fibrosis. Both palpation of the lung and microscopical sections show much more fibrosis to be present than would be expected by looking at the lung with the naked eye. Micro-

scopical sections show occasional small spicules of asbestos. The heart is larger than normal and the greatest enlargement occurs in the right side, particularly the right ventricle.

In North Carolina asbestosis has been made a compensable disease under the Compensation Act.

The author draws the following conclusions:

1. Asbestosis is a definite disease entity.
2. Inhalation of air laden with asbestos dust and fibers produces characteristic changes in the lung.
3. The time required for the development of the disease is variable. The earliest patient in my series had worked in an asbestos mill only sixteen months.
4. The disease "asbestosis" differs from the disease "silicosis" clinically, pathologically, and roentgenologically.
5. While the roentgenogram is the most reliable diagnostic aid, the interpretation and correlation with clinical signs and symptoms is often difficult. Without the history to exposure a certain number of slightly advanced cases will not be recognized.
6. A fair percentage of the slightly advanced and the moderately advanced cases do tend to improve and the attendant disabilities to become lessened when removed from asbestos dust.
7. Asbestosis does not predispose to tuberculosis.
8. From my observations asbestosis is not primarily a progressive disease.

RADIOGRAPHIC FINDINGS IN PULMONARY ASBESTOSIS

1. Emphysematous type of chest.
2. Flaring of lower ribs.
3. Trachea not displaced.
4. Diffuse fine to coarse fibrosis reaching the periphery, interstitial in character, differentiating it from the roentgenologic appearance of silicosis.
5. Hazy ground-glass appearance of lung fields.
6. Increased density of all pleural markings.
7. Shaggy appearance of the cardiac outline.
8. Tendency toward right-sided cardiac enlargement.
9. Disproportionate rise of left diaphragm.
10. Degree of cardiac involvement is not consistent with that of pulmonary involvement.

SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.

1400 Monroe Avenue, Memphis

The Acute Gall Bladder. Frederic Taylor, M.D., Indianapolis, Indiana, *Surgery, Gynecology and Obstetrics*, Vol. 63, September, 1936.

Several pertinent questions are discussed concerning the acute gall bladder relative to the incidence of complications resulting from deferred surgery and the prognosis of early surgery. The

paper is based on 129 cases in which there was an actual suppurative process demonstrated at operation, the presence of gangrene, or a lesser degree of acute cholecystitis.

The author divides the cases of acute cholecystitis into three groups, basing the classification on the pathological findings in the gall bladder wall: (1) Acute edematous gall bladder, where there is a minimal number of inflammatory cells. (2) Acute suppurative gall bladder, where the inflammatory cell infiltration is prominent, at times leading to a destruction of mucosa. (3) Acute gangrenous gall bladder, where there are hemorrhagic infarcts leading to necrosis and perforation, or simply suppurative gangrene.

The white blood count and differential carry great weight in classifying the clinical gall bladder. The average white count in group 1 was 12,500 with 77.8 per cent polymorphonuclears; group 2, 15,200 with 80.5 per cent polymorphonuclears; in group 3, 20,000 total and 82.5 per cent polymorphonuclears. However, it is estimated that ten per cent of all "acute gall bladder" patients have a normal total and differential count on admission to the hospital.

In the author's series there were twenty-nine deaths—a mortality of 16.3 per cent. He presents a table comparing the mortality in the three different groups with reference to the time of operation after the acute onset and there is a very marked increase in the mortality in cases operated more than five days after onset, while those cases operated within the first forty-eight hours show a very low mortality. Delay of operation up to the fifth day caused an increased mortality only in the gangrenous group. This, however, includes only the cases not improving with waiting and does not include those getting well spontaneously and without operation.

In the cases treated at first symptomatically, 30.3 per cent of the acute edema group were not improved or were worse; of the acute suppurative group, 64.6 per cent showed no improvement; in the gangrenous group none was improved. The incidence of gangrene, perforation or extracholecystic abscess in acute gall bladders is placed at around twenty per cent.

There are no infallible criteria by which the diagnosis of "acute gall bladder" can be made. The most reliable is probably an evaluation of the white blood count and differential. It would seem best then to operate on the acute gall bladder as soon after diagnosis as the patient can be prepared with adequate amounts of intravenous glucose and water. The cases in which the diagnosis is not clear cut, it would seem wiser to explore rather than run the risk that accompanies the unoperated acute gall bladder.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.

By G. A. WILLIAMSON, JR., M.D.

Medical Building, Knoxville

Juvenile Tuberculosis of the Kidney, Diagnosis and Treatment. Charles P. Mathe, M.D., F.A.C.S., S. G. and O., September, 1936.

In reviewing 4,698 cases of unilateral surgical renal tuberculosis, 565 (12 per cent) occurred in infants, children, and adolescents, age one to twenty years. Forty-two-hundredths per cent occurred in infants of one to five years, 1.08 per cent occurred in children of five to ten years, and 10.5 per cent in ages of ten to twenty years. The author also in reviewing his own cases reports six out of fifty-eight cases, or 10.3 per cent, occurring in ages from eight to eighteen.

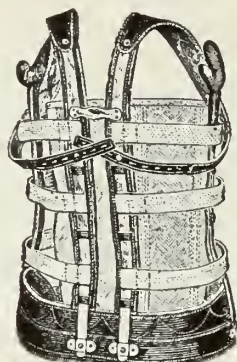
Because of the lack of proper urological instruments, X-rays, etc., renal tuberculosis in children was not properly diagnosed during the past century, and was rarely discovered except at autopsy. Modern urological methods of diagnosis have shown that this condition is more common in children than was previously thought.

Juvenile renal tuberculosis should be suspected in children suffering from chronic cystitis, persistent pyuria, and relapsing pyelitis, with acid urine, which, when subjected to examination, does not reveal the organisms usually encountered in pyelonephritis and cystitis. In such cases one should proceed to search for tubercle bacilli in the urine.

The symptoms are slowly progressive cystitis, accompanied by frequency, urgency, odor, persistent or recurring hematuria, and nocturnal incontinence, dull pain in the lumbar region, and renal colic. The kidney may become enlarged and be palpable. There is also usually fever, anorexia, loss of weight, loss of strength, and night sweats. There is usually a history of exposure to tuberculosis, and evidence of the disease in other organs of the body.

The diagnosis may be rather difficult to make in some cases, especially is this true in the early course. An infant or child of any age can usually be successfully cystoscoped, kidney functions, specimens obtained for examination, and pyelographic pictures made for diagnosis as in the adult.

The treatment of unilateral renal tuberculosis in children is early nephrectomy as in the adults. The aftercare should consist of adequate climotherapy, heliotherapy, and hygienic dietary measures carried out in a sanatorium.



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No. 12

PYLORIC STENOSIS IN INFANTS, WITH A FEW MODIFICATIONS IN OPERATIVE TECHNIC (A REPORT BASED ON A SERIES OF SIXTY CASES)*

JAMES W. BODLEY, M.D., F.A.C.S., Memphis

CONGENITAL hypertrophic stenosis of the pylorus, while far from uncommon, is a most interesting anomaly. Early recognition and prompt medical and surgical treatment should effectively relieve the condition in practically every case. We have found that the average surgeon is not qualified to alone handle these small children, but should call in a pediatrician to cooperate in the preoperative preparation and to govern the postoperative feeding. In a series of sixty cases we have followed this procedure, with most gratifying results.

The etiology is unknown. It has been found at autopsy on a seven-months premature infant, and therefore may be considered congenital. Barbour has recently advanced the theory that it is the result of a parasympathetic stimulation.

Histologically, there is an overgrowth or hypertrophy of all the muscular layers of the pylorus, particularly the circular fibres, with an increase in the density of the fibrous sheaths. The gross appearance of a section of pyloric tumor shows a marked thickening of the fibrous bands, especially of the inner layer. Undoubtedly these bands are a factor in the obstruction, and perhaps the bulk of the hypertrophied involuntary

muscles, plus edema, may be an additional cause, even though the muscles are relaxed under the administration of atropine.

Pyloric stenosis is present more often in boys than in girls. The reported ratio of sex incidence varies from 5:5 to 7:1. In our series, only two of the patients were girls, or a ratio of 29:1.

The ages of the infants in this group varied from nine days to two months, the average being nineteen days.

In the sixty cases, there was only one death, or a mortality of 1.6 per cent.

The symptoms are usually uniform. The child may be apparently normal for the first few weeks of life. Vomiting, which is always the first sign, begins in the majority at the age of about two weeks. From a regurgitation, the character of the vomitus becomes projectile, often being thrown several feet. The vomitus never contains bile, but is made up of the stomach contents of one or more feedings; as a rule, however, it occurs after each feeding. The patient rapidly loses weight, shows a pronounced wasting and dehydration, and an alkyllosis from a decrease in blood chlorides. A vicious circle is thus produced. Constipation is present and the urine is scant.

On physical examination, exaggerated gastric peristaltic waves are perceptible in every case. These are best discerned after the child is given water and subsequent

*Read before the Tennessee State Medical Association, Memphis, Tennessee, April 14, 15, and 16, 1936.

stimulation by light massages through the abdominal wall. Several waves proceed in rapid sequence.

A search should always be made for a pyloric tumor, which, if found, is pathognomonic. Some authors have stated that invariably a tumor may be palpated, but despite the fact that I pride myself on my

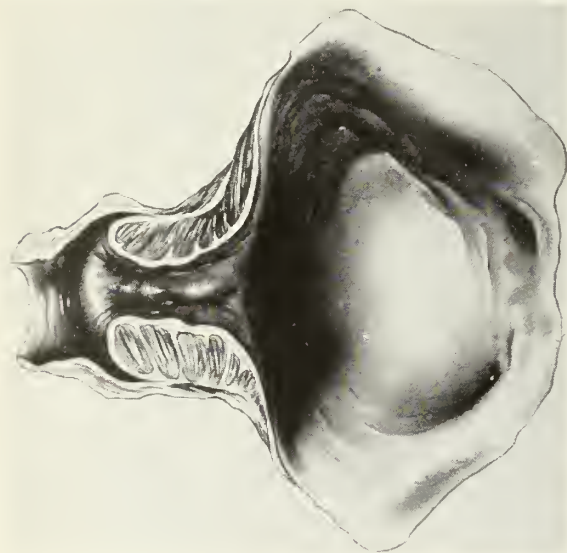


Fig. 1. Cross section through pylorus in pyloric stenosis. Note duodenal end of tumor with distance to intestinal lumen.

acuteness of touch, I have been able to definitely feel a tumor in only three patients of this group, although it was present in all at operation.

A roentgenogram made after the administration of a small amount of barium may aid in determining whether the obstruction is pyloric or duodenal, and an injection of atropine will show whether the condition is merely spasm. However, we rarely use this examination.

As a rule, therefore, the diagnosis is made by (1) the history, (2) observation of the time and type of vomiting, (3) the appearance of the child, (4) visible exaggerated gastric peristalsis, (5) roentgenograms demonstrating whether obstruction is present and, if so, its location, and (6) a palpable tumor.

The treatment of pyloric stenosis should consist of (1) preparation for operation, (2) operation, and (3) postoperative care. The first and third are each just as important as the operation itself.

Preoperative Care. — The child with pyloric stenosis needs no emergency operation; in fact, surgery should never be un-

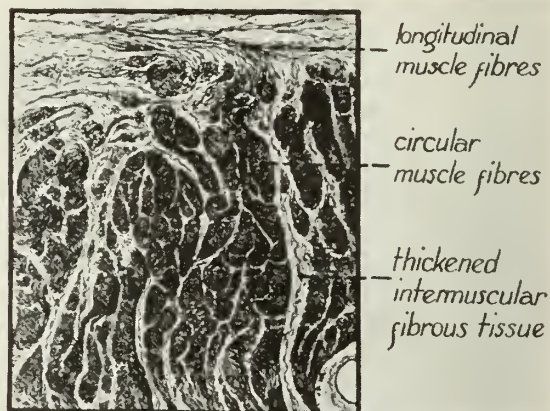


Fig. 2. Microphotograph case of congenital hypertrophic stenosis showing hypertrophied muscle fibre, especially the circular layer and thickened intermuscular fibrous tissue.

dertaken until the effects of the obstruction, chiefly dehydration and loss of chlorides, are corrected.

Hypodermoclysis is begun immediately. Normal saline, 100 cubic centimeters, or glucose, five per cent, should be given morning and night. Often, saline is introduced into the peritoneal cavity, and an intravenous injection of saline or saline and glucose, 100 cubic centimeters to 300 cubic centimeters, may be administered for a "quick pickup." This method, however, involves cutting down on a vein because of the small size of the vessels, and is not used unless absolutely essential. As the child is dehydrated and the blood picture shows a concentration, transfusion is not only unnecessary, but is contraindicated, since it is the fluid content that is lacking.

Operative Procedure.—If the patient is under one month of age, morphine sulphate, grain 1/140, should be given one-half hour before his removal to the operating room. He is then fastened to a padded board having leg and arm pieces, and a sugar-tit is made ready for use. The abdomen is next prepared, care being taken not to burn the skin with strong antiseptics.

A one per cent solution of novocaine is injected through a fine needle, the skin, fascia, and muscles being lightly infiltrated.

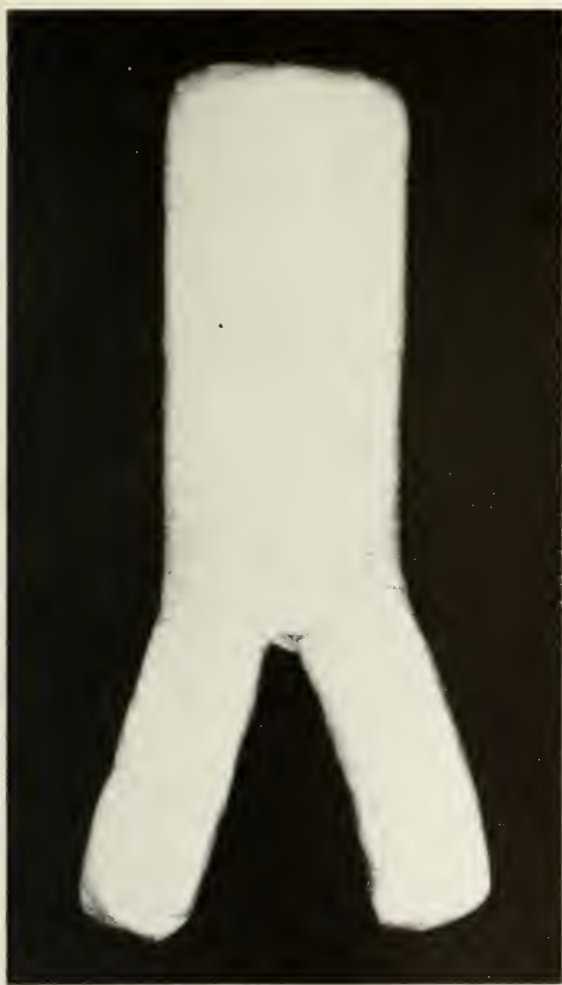


Fig. 3. Padded board to which infant is fastened.

An upper right rectus incision is made as high as possible above the lower border of the liver, in order to have this organ as a buffer between the gastrointestinal tract and the wound. Before opening the peritoneum, a small catheter is inserted into the stomach, preferably through the nostril, to allow the escape of gas. The peritoneum is still opened, the collapsed stomach is brought up into the wound, and with a small blunt hook, one to one and one-half centimeters in diameter, the pylorus is lifted. The tumefaction is delivered and held by the hook and one finger. With a small, round-bellied knife, an incision is made in the avascular area through the serosa and into the muscularis, and this opening is widened and stretched with a pointed hemostat until all the fibres are torn or separated, exposing but not opening the mucosa.

The incision is made well up on the stomach and down to the duodenum, particular care being taken at the latter end not to enter the lumen, as the wall is thin. This catastrophe is less likely to occur with the catheter in the stomach to prevent the usual

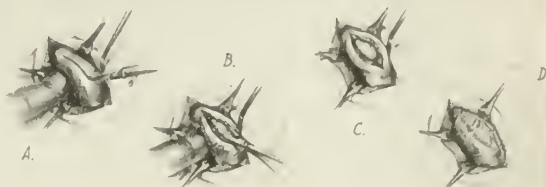


Fig. 4. Modified Rammstedt operation. a. Incision through serosa into thickened muscularis. b. With sharp hemostat separating fibres until mucosa is exposed. c. Exposure of mucosa. d. Omentum sutured over pyloric wound.

bulging. When this part of the operation is completed, a small flap of omentum is placed over the pyloric wound and fastened with four silk sutures to the upper margin. The abdominal wound is now closed by layers, No. 1 plain catgut being used for the peritoneum and muscle, No. 1 chromic catgut for the fascia, and either dermal or black silk for the skin. A small piece of gauze is placed over the wound, and strips

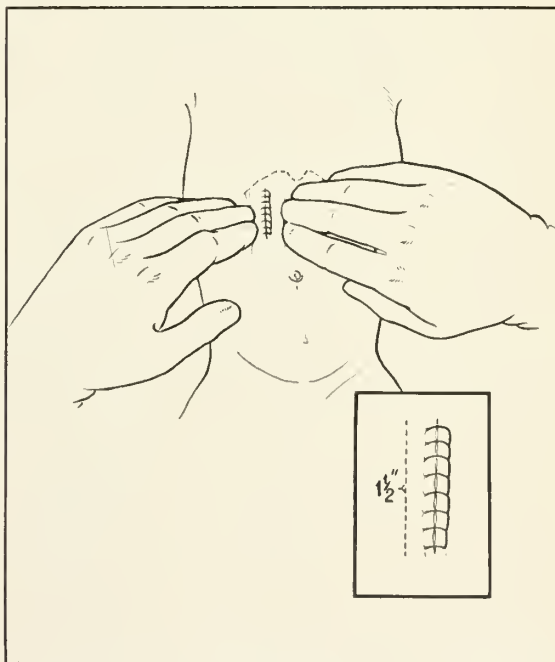


Fig. 5. Support of abdomen while removing sutures.

of adhesive two inches wide, bound sufficiently tight to hold the wound firmly against any strain, are carried well around to the back. A tight muslin binder is applied immediately and allowed to remain. The stitches are not removed until about the ninth day. During removal, care should be taken to hold the sides together by having an assistant press on either side of the abdomen. Adhesive strips are re-applied at once to support the wound firmly. This dressing should be left in place for two weeks.

Our one fatality in this series was caused by removing the stitches on the third day and failing to replace the tight adhesive binder. During the night the child cried

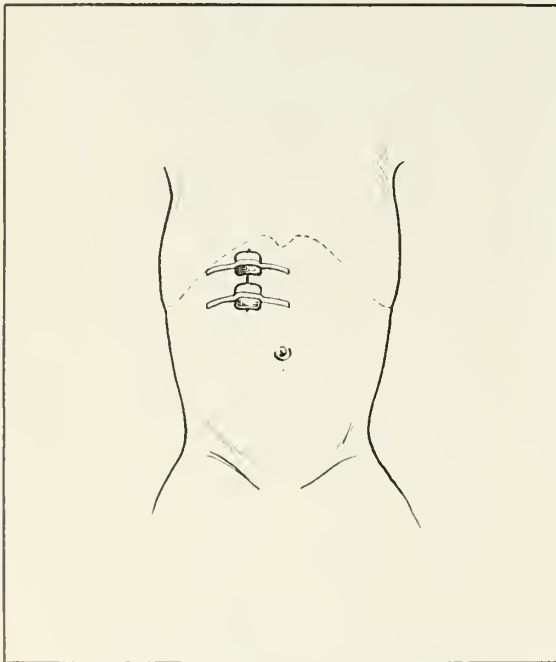


Fig. 6. Improper dressing of wound after removal of stitches. No support.

and eviscerated. Until the time of the accident this patient was doing nicely, but immediately afterward developed peritonitis and died.

Postoperative Care. — Beginning two hours postoperatively, fifteen cubic centimeters of glucose is given by mouth, and one hour later, fifteen cubic centimeters of breast milk. These feedings are kept up alternately every hour for twenty-four hours; the amount is then doubled during the next twenty-four to forty-eight hours.

After seventy-two hours, normal feedings are given if tolerated.

In summary, we have attempted to eliminate the possibilities of complications from every cause, especially dehydration, respir-

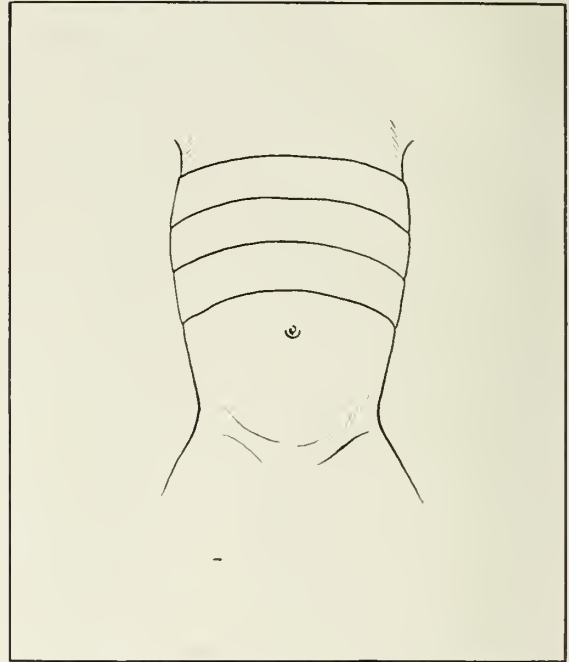


Fig. 7. Correct binding of abdomen with two-inch adhesive strips. Applied after operation and reapplied after removal of sutures.

atory infection following anesthesia, distention of the stomach during operation, which causes increased intra-intestinal pressure and danger of opening the intestinal lumen, and the separation of the wound and evisceration. The measures employed are: narcosis before operation with morphine sulphate, grain 1/140, and novocaine, one per cent, supplemented by a sugar-tit if the patient cries; a catheter inserted and left in place during operation to insure collapse of the stomach; and the tight application of an adhesive binder at the close of the operation and again after removal of the stitches. Finally, of utmost importance in the successful treatment of pyloric stenosis is the close cooperation of the surgeon and pediatrician.

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DISCUSSION

DR. E. C. MITCHELL (Memphis): Gentlemen, this is an important subject not only to the surgeon, but more so to the internist and the pediatrician. Because these cases are seen first as a rule by the medical man, the high mortality is most often due to delay in diagnosis.

All cases of projectile vomiting are due to obstruction. I think we can make that statement without any difficulty. The type of obstruction has to be determined. I have taught my medical students for a number of years that there is no such thing as pyloric stenosis and pylorospasm, that it is simply a matter of degree and that all cases are pyloric stenosis, either medical or surgical, and I think if we take that viewpoint we can make a more rational diagnosis.

Several years ago Marriott made the statement that it is better to call the surgeon in all cases of projectile vomiting which continue beyond two weeks as the extreme limit and in which there is much loss of weight. It has been my experience that if the child loses one-third of its body weight it is virtually a hopeless case for the surgeon.

I should like to emphasize the relative importance of a few of the symptoms necessary for diagnosis as already discussed by Dr. Bodley. The first is: Projectile vomiting of course is the first symptom. The time of vomiting is most important. If the patient vomits the food as soon as he gets it, it is due to a cardiospasm. If the projectile vomiting remains a considerable time after feeding and he still vomits, it is probably due to obstruction lower down. If this vomiting begins immediately after birth, it is virtually never pyloric stenosis; it is probably due to an obstruction somewhere below the stomach.

We have had several cases where there was a duodenal band which caused the obstruction. The symptoms are very similar to pyloric stenosis except that this condition occurs soon after birth, and as a rule vomiting does not occur after each

feeding, but there is an accumulation and a large amount is vomited after several feedings. Bile has not been found even in some of the cases where the obstruction was in the upper bowel, so I do not believe this is an accurate symptom.

Another point in the diagnosis would be physical external peristalsis seen particularly after feeding. This is usually visible.

I fully agree with Dr. Bodley that if you can palpate the tumor it is excellent evidence, but I have been able to find it only in very few instances.

The next symptom of value I would mention would be X-ray diagnosis. We have given this up in most of our cases. (I know Dr. Lawrence is going to disagree with me, for the reason that in the first place we do not consider the presence of barium in the stomach and in the bowel of much value during operation; and in the second place we have found cases of absolute pyloric stenosis at the operating table where barium has passed through.)

And last should be mentioned, probably the most valuable symptom in diagnosis, obstipation. In other words, no coal, no ashes. If the food is not going through you will have no stool.

As to the medical treatment; the medical treatment consists in atropine. This atropine should be given according to the physiological requirement of the child. Some require more than others. There is no absolute dosage. We usually give it to the point where there is a blush of the skin. We find a fair number of children who cannot tolerate atropine. This is evidenced by the fact that the fever rises and they become very restless, sometimes to a considerable degree.

The next point in the medical treatment is supervision of the diet to some type of food that is low in fat, because the high fat foods remain longer in the stomach. Breast milk, of course, is best; next, condensed milk, and fat-free buttermilk. Thick cereal paste because of its bulk is sometimes of value. Any change in diet is liable to be followed by temporary improvement, but this is usually not permanent where there is any degree of stenosis.

As to the preoperative management; make an early diagnosis as to whether the condition can be cured by medical treatment or if surgery is necessary before he shows evidence of fluid imbalance, as alkalosis or acidosis.

As to the postoperative treatment, Dr. Bodley has given the treatment that we use in detail. I think that that is almost as important, if not quite so, as the operation. The use of fluids should be emphasized, parenterally if necessary, but much preferably by mouth. Sometimes postoperative treatment requires the use of atropine again; the spasm will reappear and the use of atropine over a short period will give relief. Occasionally one stomach washing, if the child begins vomiting, will have a marked effect.

In closing, I should like to emphasize that the mortality in pyloric stenosis is still too high. I believe that this mortality should be attributed to

the internist and to the pediatrician rather than to the surgeon. Surgery has now reached that stage of perfection with this operation that if the child is brought to a competent surgeon on time there is usually a relief of the condition.

DR. W. S. LAWRENCE (Memphis): There are two points of information I would like to get from Dr. Mitchell. Before stating those points, I want to say to Dr. Bodley that I enjoyed his paper ever so much, and I regret that there were not more here to profit by it.

The point I want to ask Dr. Mitchell is first of all this pathognomonic symptom mentioned of projectile vomiting. I would like to ask him what kind of vomiting he gets in certain brain tumors.

I would also like to ask him what *external* peristalsis is.

DR. JAMES W. BODLEY (closing): I thank the discussants, also those who have remained to listen to the paper.

As to Dr. Mitchell's discussion, I do not think there is a thing we can say to answer it except that a great many of these cases have been worked jointly and cooperation has given the results.

To answer Dr. Lawrence, the peristalsis is of the stomach; it proceeds from the left side to the right.

I have seen it many times but it is not external peristalsis; it is internal with a visible demonstration of it.

IMPORTANT POINTS IN PROSTATIC SURGERY OF INTEREST TO THE GENERAL PRACTITIONER*

G. M. ROBERTS, M.D., Chattanooga

IN THE BEGINNING permit me to state that I am attempting to give a paper which will prove beneficial to the surgeon who does an occasional prostatectomy, and to the physician who refers his prostatic work but is often called upon to interpret the condition and prognosis of the patient and the various procedures that the surgeon might elect.

I am to take up the phases in the following order: histories; physical examinations; preliminary treatment; preoperative preparation; types of operation; control of hemorrhage; postoperative care.

I. HISTORIES

Maintain the same orderly plan of procedure for each case, laying particular emphasis on some of the following points:

1. Differential diagnosis. Most notably the polyurias, the neurogenic infections, and irritations. In this connection may we mention that Hinman lists twenty-eight causes of urinary frequency, which is the most common symptom in prostatic hypertrophy.

2. Always permit the patient to give his own personal observation and opinion of his case without interruption.

3. Keep in mind that obstructions at the bladder neck are not limited to the aged.

4. Remember that according to statistics the cause of deaths in prostatic surgery rank as follows: cardiovascular diseases, hemorrhage, uremia, and pneumonia.

5. In taking a history keep the above facts in mind. Those things conducive to the cause of death should be particularly stressed.

6. The past infectious conditions of the urinary tract that the patient might have had: pyelitis, cystitis, urethritis, and prostatitis.

7. In making inquiries relative to gonorrheal infections do not content yourself

with the simple question, "Have you ever had gonorrhea?" Ask about past urethral discharges. The importance of this point may be appreciated when you come to examine the possibility of strictures. Do not forget that old men as well as young have strictures of the urethra.

8. Keep in mind whether or not the patient has been catheterizing himself, if the present trouble is of sudden onset, and if he has had chills and elevation of temperature.

9. Note the special symptoms that would cause you to suspect some cardiovascular or cardiorenal disease, such as dyspnea, edema of the feet, ankles, hands and face, attacks of syncope, and attacks of pain in the region of the sternum accompanied by dyspnea and pallor. The importance of a history of the past cardiovascular symptoms will be appreciated and give you valuable information as to whether or not it is necessary to have an electrocardiogram made. Also it will help you to decide on the type of anesthesia to be used.

10. Do not forget that patients sometimes die following prostatic surgery from coronary occlusion which may or may not be accompanied by the cardinal symptoms of this condition. Hypertension per se is not a contraindication to operation. Naturally this does not mean that a malignant hypertension or hypertension brought on by cardiorenal conditions is not to be given serious consideration.

11. Hemorrhage. Do not neglect the possibility of the patient having a hemophilic tendency. Note whether or not he has a tendency to bleed following operations, such as the pulling of teeth, or accidents in any form.

12. Uremia. Ask about a tendency to fall asleep without any apparent cause, or in other words attacks of drowsiness.

13. Malignancies. A history of malignancies.

*Read before the Tennessee State Medical Association, Memphis, April 14, 15, 16, 1936.

nancies in parents should be taken. The condition of nutrition, has there been any loss in weight, or has the patient gradually become anemic?

14. Question as to evidence of urinary calculi.

15. Pneumonia. Make inquiries relative to a past history of pneumonia, asthmatic attacks, coughs and of recent coryza.

16. The possibility of neurosyphilis should be kept constantly in mind.

17. Present illness. Onset in full, nocturia, its duration and frequency, the slowness of the stream, the distance of the projection and whether or not it is followed by dribbling (as a rule prostatic obstructions do not cause dribbling, but strictures will). Hematurias, the type of hematuria, whether it is accompanied by pain, precedes urination, terminal or mixed with urine. Dysuria, what has patient done in the way of treatment and is the condition better or worse than at onset.

II. PHYSICAL EXAMINATIONS

1. Remember that in palpating the prostate you may mistake a painful hemorrhoid or fissure for a painful prostate.

2. Keep in mind that one out of five hypertrophied prostates is malignant and that you may have a grade four prostate per rectum with no obstruction, or the reverse may be true, a grade one hypertrophy with complete retention.

3. Do not completely empty the bladder in an attempt to estimate the amount of residual urine where the general condition of the patient is not good, or he is uremic or has a total retention. Do not depend on gradual decompression by the use of a clamp and releasing it at frequent intervals.

4. Keep in mind that a Coudé catheter of semirigid rubber with solid tip is probably preferable to all other catheters, and that a prostatic catheter will pass frequently when no other catheter will, and, with that in view, make your first attempt at catheterization a successful one. Never use an old soft rubber catheter.

5. Make your examination general and not special at this time.

6. Cystoscopic examination.

a. Do not attempt to do a cystoscopic

examination unless you are thoroughly familiar with the use of this instrument, because if you are not familiar with its use, you will not be able to interpret your findings, and you may do the patient more harm than good.

b. Keep in mind the fact that, even though you find no residual urine and that the prostate is small, middle lobes and contractures of the bladder neck and small palpable growths around the internal meatus may be responsible for the prostatic symptoms and may require operative procedures.

c. Look for diverticuli. Remember that if they empty themselves they need no operative procedures.

d. Keep in mind that prostatic cases frequently have infections of the upper urinary tract.

7. Roentgenographic examination.

a. Roentgenograms of all cases should be made, not only to determine the presence or absence of calculi but for the purpose of deciding whether or not the diverticuli drain themselves, if present.

b. It is important to recognize the technique of determining the presence or absence of diverticuli since a simple cystogram will not give you this information.

8. A complete urinalysis should be done on all cases.

9. Blood chemistry.

a. Do not be contented with one blood urea examination. Make as many as may be necessary and do not assume that it is stabilized at a high point because it refused to come down under the proper treatment. Let the general condition of the patient help you to determine this important point.

b. Phenolsulphonephthalein tests are just about as important as a blood urea examination, and delayed function over a definite period of time is worse than a low total output.

c. The estimation of the coagulation time of the blood should be done early so that treatment, if required to increase the patient's coagulation, can be instituted at once.

III. PRELIMINARY TREATMENTS

May I state at this time that the question of ligating the vas or taking a section out should not be neglected. It should be done as soon as you have definitely decided that you are going to do some form of operation, and do not wait until you have given them some preliminary drainage to cause the infection to take place in the seminal vesicles that will not be corrected by ligation of the vas. In young people under fifty it is better just to ligate the vas, while in older men you can cut a piece out, it will not make any difference. (Applause.)

1. Water is the most important single diuretic. It should be given frequently by every avenue of entrance if necessary. It is important to instruct the nurse to give not less than a certain amount of water in twenty-four hours, for instance 4,000 cubic centimeters, yet keep in mind that you can give too much water in some of these cardiac cases.

2. During this time a general physical examination should be made covering the points that have not been gone over before.

IV. PREOPERATIVE PREPARATION

1. This should include not only the abdomen and two-thirds down the thighs, but the area around the anus and perineum should be included.

2. A prostatectomy is never an emergency operation, and we should select a time when the patient feels at his best, not overlooking a slight bronchitis.

3. Some patients will not tolerate an indwelling catheter and will have to have a two-stage operation. This applies to cases that are being prepared for resection as well as prostatectomies. Patients that tolerate a catheter poorly frequently go to the bad following a resection, even though the case is ideal for transurethral resection.

4. Anesthetic. Old men tolerate spinal anesthetics well, and the occasional operator can do a better operation with a spinal anesthetic.

V. TYPES OF OPERATIONS

1. If you resect prostates, remember that eighty per cent can be resected satisfactorily, and ten per cent of the remaining

twenty per cent can be done if for any reason it may be desired, however do not expect 100 per cent satisfactory results in this 10 per cent. Assuming that you are going to do a prostatectomy, keep in mind that for the average operator it is best to do a two-stage operation.

2. Aseptic technique is just as important in prostatic surgery as it is in other surgery. You should utilize Trendelenburg's position on the operating table.

3. The incision should be made long enough to accommodate the entire hand down to the bladder, and the hole in the bladder should accommodate at least two fingers, the bladder having previously been distended with an antiseptic solution, mercurochrome, boric acid, or acriflavine.

4. In doing a two-stage prostatectomy always anchor the bladder high, bringing it out at the upper end of your incision and anchoring it to the fascia, and in this way there will be practically no danger of getting into the peritoneal cavity when doing the second stage.

5. Do not do a blind prostatectomy. Open the bladder well, insert your retractors and inspect the interior of the bladder and the prostate, and, after it has been thoroughly cleansed with a suitable antiseptic, the retractors can be removed and the prostate enucleated. If by any chance you start to enucleate a malignant prostate and see that it is not going to come out well, it is best to control the hemorrhage and later do a transurethral resection.

6. In closing do not put any sutures through the mucous membrane of the bladder.

VI. CONTROL OF HEMORRHAGE

1. There are several ways to control hemorrhage. You should use the way that you are most familiar with. Probably the best way for the average operator is to pack the prostatic cavity with gauze, filling the entire cavity and bladder with the gauze. Spurters should not be controlled by packing, but you should inspect the interior of the capsule with your bladder retractor in place and ligate the spurter.

2. You should never unnecessarily expose the prevesicular area by indiscriminate

separation of the bladder from the surrounding tissue.

3. In removing the gauze take several days if necessary, removing as much as can be done at the first attempt, but stopping when bright red blood appears on the gauze.

VII. POSTOPERATIVE CARE

1. A hypodermoclysis should always be given to these cases on returning to their room.

2. Irrigations with hot boric acid solution after the pack has been removed should be carried out as long as a suprapubic tube is in place.

3. The urine should be kept acid at all times. If an infection appears, Dakinize the area. Use dilute acetic acid on packs if sloughing takes place. Do not hesitate to do a secondary closure when the sloughing is completed.

4. The average suprapubic fistula will close at the beginning of about the third week, and if it does not close by the end of the fourth week, suspect that a piece of tissue has been left in the prostate.

5. Sounds, 20 F or 24 F, should be passed at the end of the second week, but this should be done gently. On failure to enter do not unnecessarily traumatize the area. It is better to wait until nature has a chance to restore the normal flow of urine.

6. These old men are very much like children. They are restless when confined in a bed flat of their back and should be permitted to sit up at the earliest possible moment. Do not keep them on their back all the time, turn them from side to side to prevent hyperstatic congestion of the lungs.

7. If after their preliminary or postoperative treatment the patient's condition does not appear good, a blood transfusion can be given, remembering that the time to give a blood transfusion is just before they have to have it.

DISCUSSION

DR. J. B. NEIL (Knoxville): I want to compliment Dr. Roberts on this paper. It is a very important subject that he has brought to us. He has covered it very thoroughly, has given us known facts, and has left very little room for discussion.

I would like at the outset to say that for the general practitioner it seems to me that early

diagnosis of these cases is of extreme importance.

I have been accused of lying so much in the last three years that I have become accustomed to it and it does not bother me any more, but I will say that I believe I have developed a method of treatment that will prevent the development of prostatic hypertrophy. It is still in the experimental stage and still remains to be definitely proven.

These cases, of course, should all be worked out by X-ray and air cystograms to find out the size of the prostate, and by intravenous pyelography.

The three important things that point to the other symptoms of prostatic obstruction are stricture of the urethra, which by the way has no residual urine, prostatic obstruction in the early stages, or, when there is definite obstruction, there is always residual urine, and it is a very easy matter for the general practitioner to determine this fact, but it is not done. It is so easy to have the patient void; slip a little catheter in and see how much urine is left. Any general practitioner can do that, and residual urine is a positive proof of prostatic obstruction.

There is only one other condition with such results, and that is a spinal cord bladder, which should not, of course, be overlooked. Always keep that in mind.

Before diagnosis I think it is important not to do any unnecessary instrumentation. When I know positively that a patient has prostatic obstruction, I do not use the urethroscope until immediately before the operation. With the same anesthetic, I use the urethroscope to determine the type of obstruction I am dealing with; then if I am going to do the transurethral method, I go right ahead under the same anesthetic and treat him. A great many times a urethroscope will throw these men into terrific symptoms of frequency, burning, straining, chills, and high fever.

I believe that Dr. Roberts is a little high on his malignancy of one in five. I do not know of anybody who gives that high a malignancy in all prostatic hypertrophies.

I will state that all general practitioners should have what is known as a semirigid catheter, which is very easy to slip into the urethra. It is a catheter with a little Coudé curve on it; it is a soft rubber catheter, but much more rigid than the ordinary soft catheter that one buys in the drugstore with only one eye. It rides over any middle lobe or median bar that you might encounter.

Middle lobe prostates produce the greatest symptoms, and it is possible to have a middle lobe without any residual urine, or a very small amount of residual urine, and still have an enormous middle lobe which is dropping right down into the neck of the bladder. The patient has straining and all those symptoms, and those cases do not tolerate an indwelling catheter. I have found that out from experience. With any urea nitrogen or

kidney function test we have had a rule never to operate on any case until we get the urea nitrogen below thirty-five, but I will say that creatinin is a much better prognostic sign; if there is a high creatinin, one had better lay off entirely because the patient will only live a short time regardless of what one does, because that is the breaking down of the patient's own muscle tissues, and he is a hopeless case.

I think that ligation of the vas is a good thing, for several reasons, but it is a question whether it does any good in deferring old age or reactivating the patient as Steinach brought out.

Water is very important, given in a great many ways. I think the indiscriminate use of glucose, as we all know, has become routine in the hospital; the surgeon says give him a thousand cubic centimeters ten per cent glucose, and we have got in the habit of it, but I think that it is a bad practice. If the patient needs it, if he has a low kidney function, he should have 4,000 cubic centimeters of fluids in twenty-four hours. Fluids by mouth is better than intravenous. I am sorry I cannot finish this discussion, but my time is up. I again wish to thank Dr. Roberts for this excellent paper.

DR. I. G. DUNCAN (Memphis): This is a very timely paper and well presented, and I arise only to commend the doctor and to emphasize a few points which he has already mentioned, and also to give you a few slight changes which in my experience have been a little more practical.

One thing the doctor mentioned was hemorrhage. Of course, hemorrhage is one of the very important complications of all prostatic surgery. For the past few months we have been trying out some of the sex hormones on these old men before operations. We have been using antuitrin S. or follutein in cases which tend to bleed at operation. We also have been giving pituitrin every four to six hours postoperatively for one or more days. Since adopting this method, we have had very little trouble with hemorrhage.

With regard to the insertion of a catheter, of course, these Coudé catheters are very important, but not many general men will have one in their bags, it will always be at the office, and they tend to deteriorate very rapidly regardless of whether they are used or not. But if you get a guide and a Robinson's catheter with a hollow end, you can always keep that in your bag, and when you get these old men who cannot void, the catheter is threaded over your guide and slipped into the bladder by the same method you would use in passing a sound; remove the guide and leave the catheter in, it will take care of the situation.

With regard to local anesthesia, I use sacral more often than I use spinal, and I think it is better.

With regard to the blood chemistry, in the general practitioner's case where he wants to find out about the patient before he sends him away, the PSP test is much simpler for him. It consists

of injecting one cubic centimeter of the phenol-sulphonaphthalein into the vein and waiting an hour and five minutes and collecting the urine, and then collecting it again an hour later. However, we like to do both, run a blood chemistry and check it with a PSP, but never operate upon a patient with a low PSP regardless of his blood chemistry.

Vas ligation I think is very important. The patients that I have seen have gotten along better after operation where they have had a vas ligation, regardless of the fact that it prevents acute epididymitis, which is very important.

In regard to irrigating the bladder, as Dr. Turley mentioned yesterday, for the past year most of us have been using a modified Wangenstein for this irrigation. It has the advantage of being sterilized and put together, and you do not have to depend on some orderly or nurse using a syringe that may not be sterile. We feel that we have prevented secondary infections in quite a few cases by this method.

With regard to cystoscopic examination, I usually like to cystoscope these patients. I have not had the trouble that some doctors have had with all of this pain and straining and so on, which they speak about. I use a local anesthetic and use a gentle technique in passing the cystoscope. I like to do this before I get ready for operation because I feel that if you do not understand just exactly the type of obstruction which you have you cannot know so well just what operation is needed. He might need a punch; he might need to be rolled; he might need prostatectomy and you cannot tell just what you should do until you have found out the true nature of your obstruction.

One more word about intravenous glucose. I am very much against giving every patient large quantities of glucose intravenously, for if you do, you will have some myocardial insufficiencies with acute failure of the heart and a lot of deaths which otherwise could be avoided.

DR. J. L. MORGAN (Memphis): Dr. Roberts is to be congratulated upon selecting a subject so important to all of us and presenting it so well. There are just a few points that I want to emphasize further. I also want to speak a moment on the high mortality which he mentioned they had years ago. We still have high mortalities in certain hospitals because of the fact that we are doing a class of work at those hospitals where these particular men do not come until they are almost dead. I refer particularly to charity hospitals, public hospitals, especially in the Negro race, because they are the type of patients that will not report for treatment because of fear of operation until they are forced there, and when they are forced there it is because they have an active retention; most of those cases are far gone, and even with the best preoperative care, these patients do not require much to take them away.

About strictures in old men. It was said that old men have strictures as well as the young. If

the young ever had a stricture and lives long enough to be old he still has a stricture.

I cannot see the reason for looking in the bladder to see the prostate before removing it. Through the sense of touch you can tell, in a way, whether it is malignant and, in most cases, whether you have a large prostate, or what have you.

As to draining the bladder following a prostatectomy it is advisable on removing the haemostatic bag that you slip the tip of the catheter into the end of the tube which extends through the urethra, and, as the bag and tube are removed, the catheter is pulled back through the urethra into the bladder and anchored in position. If this catheter is properly placed, practically all of the urine will drain this way, and the suprapubic wound can be permitted to heal.

Dr. Roberts did not dwell much on the type of operations which are suitable for certain types of prostates. Of course, in the last few years we have all hoped that we would do all prostates by the resection method because the public has been educated to that, to how simple it is, and what a simple operation it is, not a serious one, and all that kind of misinformation. So for the truth to some of you who probably do not do urology and who do not do any prostatectomies or prostate resections, we want you to know that it is a serious operation and not a simple operation, and the patient should not be told: "Well, they have a new method now, and it is very simple, and it will take you just a few days in the hospital and you are out," because we know that a lot of these patients die, and we know that a lot of them are not entirely relieved by resection. We must put the danger mark on the resections as well as the prostatectomies. However, we know that our percentage of mortality is less in the selected cases for resection than they are in prostatectomies. The real large adenomatous hypertrophied prostates are the type that bleed very freely, and they are the types that really should be removed by prostatectomy, either suprapubically or by the perineal route, not because they bleed freely, but because of the size of the prostate. They have a marked obstruction, and they should be removed by prostatectomy.

I did one yesterday; a white man, age 63, the prostate weighed 170 grams when it was removed. That is the largest one I believe that I have ever seen in a white man. I have seen a few probably a little larger in the Negro race. Two-thirds of the lateral lobes in this case were extending into the bladder. I do not care who the resectionist might be, I doubt that he could have done a satisfactory resection in this patient.

DR. G. MADISON ROBERTS (closing): I want to thank the gentlemen who have so liberally discussed this paper. I left them plenty of room for discussion and plenty of room to bring up something new.

As regards the catheter, the objection to the prostatic catheter, that is the linen gum catheter,

is that it soon deteriorates, as the doctor brought out, but the Tierman catheter has practically the same type of end; it is a semirigid catheter; it has an olive tip that is solid, and it will not deteriorate; you can roll it up and put it in your vest pocket, and you do not have to depend upon an instrument to introduce it with.

The trouble with the instruments to introduce catheters is that they work all right for the man who knows how to use them. I was once assisting a good surgeon in passing a catheter, and when I called for the stilet he said, "How in the world are you going to get the stilet out of the catheter when you get it through?" The first thing I did was to ask for some lubricant to put on the stilet. He then said, "For fifteen years I have been trying to use that instrument and have never been able to get the stilet out of the catheter. I see now that I have been putting lubricant on the wrong instrument."

I am glad that Dr. Duncan brought out this method that he is using in the control of hemorrhage. Of course that may have its advantages. It has not been definitely proven yet, but it is in the experimental stage.

The general practitioner cannot do very much in estimating the value of a PSP unless he catheterizes the patient each time, because if he depends upon what the patient voids, he will not get all his solution out. Of course, if you are going to do that, you should catheterize the patient to get all the fluid out each time that the specimen is taken or else leave the catheter in place until the examination is over.

I am going to give Dr. Morgan one reason why I look on the inside of the bladder before I enucleate the prostate. I was recently called on to inspect a bladder that had had a prostatectomy done seven years before, with practically no relief, and in looking inside that bladder, honestly, I could not say definitely what the trouble was; I could not tell why he did not get relief, so I did a suprapubic on him, and when I got in there I found that he had a buckling of the trigone. Now sometimes these trigones will buckle so much that they will become undermined and there will be a bridge under them, and if you take out a prostate with a buckling trigone, you are going to have a patient in just as bad shape after you get through as before you started. That condition will be overlooked with a large prostate because the prostate obstructs the view of the trigone. When you get on the inside, you can relieve it so easily by taking the electric knife and removing a section that there is no excuse for not having perfect results following the prostatectomy. However, if you fail to inspect it at the time of the operation, it will be completely overlooked, and the results will be as the patient mentioned above; and, on the other hand, a section of the trigone can be removed by resectoscope in those patients who have had it overlooked at the time of the inspection, provided the resectoscope can be introduced, which is sometimes very difficult in this special type of trigone.

KIDNEY LESIONS WITH ABDOMINAL SYMPTOMS*

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DR. HUNNER, who was the first to call our attention to stricture of the ureters, was also among the first to realize that abdominal symptoms were frequently caused by lesions of the genitourinary tract. He said that a patient with an appendicial scar and the same preoperative pain very probably had a stricture or an obstruction of the right ureter. He also showed that patients operated for chronic appendicitis were very rarely relieved of the pain, and other symptoms for which they sought relief, regardless of how many adhesions, etc., were found at operation.

Through the sympathetic nervous system disease of the kidneys and ureters may produce abdominal symptoms. Those of the upper genitourinary tract simulating gastric ulcers, cholecystitis, etc., while those in the lower are confused with appendicitis, salpingitis, cystic ovaries, intestinal obstruction, etc. When doing cystoscopies, I have often noticed that the patient complained of general abdominal cramps over the abdomen while the ureters were being dilated, but that if the kidney pelvis be overdistended, the pain was in the back or epigastric region, and was frequently accompanied by nausea and vomiting.

I am sure that every surgeon who has done many operations upon the genitourinary tract can recall cases that have become markedly distended and had all the symptoms of a dilated stomach or intestinal obstruction. In fact, I have seen several cases in whom the abdominal and gastric symptoms, distention, vomiting, etc., were so severe that they were reoperated, the surgeon thinking that an ileus had developed. But no obstruction or peritonitis could be found, and these patients all died within a short time.

During pregnancy, a right-sided colicky pain, due to a distention of the kidney pel-

vis, as a result of pressure upon the ureter by the enlarged uterus, is often diagnosed appendicitis.

In the male I have seen an acute seminal vesiculitis, with a beginning epididymitis, cause right-sided pain which could very easily be confused with an acute appendix. In fact, I know of one such case who had his appendix removed by a careful but unsuspecting surgeon. Many small cystic ovaries have been needlessly sacrificed for the relief of pains in the pelvis caused by a chronic ureteritis.

Kidney tumors, hydronephrosis, pyelitis, ptosis of kidney, stones in kidney, ureters, or bladder, stricture of ureters, chronic ureteritis, uremia, and an acute seminal vesiculitis are some of the lesions which most often cause abdominal symptoms.

To diagnose these lesions a most careful history is necessary. A urinalysis and blood chemistry will often put you on the right track. However, a negative finding does not rule out genitourinary pathology. For in uninfected hydronephrosis, chronic strictures, and even in quiescent kidney tumors the urine may appear entirely normal.

Then too if the ureter of an infected kidney should become completely plugged, or if a perinephritic abscess be present, the urine may show very little.

The leucocyte count is usually not so high in kidney lesion as in appendicitis or acute cholecystitis. However, the only satisfactory method of diagnosing these conditions is by a complete cystoscopic examination including a K. U. B. and either an intravenous or retrograde pyelogram, or in some cases both.

All patients with chronic abdominal symptoms, and where feasible, those with acute conditions, should have a urological checking before being operated. However, we urologists must also remember that not infrequently the patient may have both ab-

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dominal and genitourinary lesions at the same time. We must not let a patient die of an acute appendicitis while we are trying to dilate a chronic ureteral stricture. Better results would be obtained if the urological and abdominal surgeon would consult each other more often.

I will now emphasize some of the above-mentioned points with some case reports:

Mr. A, age 25, male, white. C. C. Pain in right side. P. H. Has had pain in right side for past two years. His appendix had been removed without relief. Examination showed tenderness over his right kidney which radiated down into his leg. Urine contained a few blood cells. K. U. B. negative. Cystoscopic examination showed an obstruction about midway of ureter. Head of table was lowered, pyelographic media injected, and picture made. The pyelogram showed a dilated renal pelvis. However, fifteen minutes later a flat plate showed a calculus in the ureter. Sufficient pyelographic media had stuck to the stone to cause it to show on the plate. Upon the removal of the stone the patient was cured.

Mr. B., age 20, white, entered hospital complaining of severe abdominal pain, marked distention, nausea, and vomiting, etc. A diagnosis of intestinal obstruction was made. The operating room was being prepared for an exploratory when the urinalysis was received, showing quite a few blood cells. A cystoscopic examination showed a stricture of the left ureter. The patient was completely relieved by an indwelling ureteral catheter.

Mr. C., white, male, age 24, entered hospital complaining of abdominal pain, frequency and painful urination, chills, rigors, etc. A stricture of the right ureter was demonstrated by a cystoscopic examination, and a ureteral catheter was left in for irrigation and drainage. The patient did nicely for four days, when he was taken with a severe pain in his right side. His white count rapidly rose, and a few hours later a surgeon was called, and a very acute appendix was removed.

Mrs. D, age 35, white, female. C. C. Frequency and painful urination, indigestion, and hypertension. P. H. She has had

her appendix, gall bladder, and both ovaries removed with very little relief. Urological examination showed ptosis of right kidney with a stricture of ureter. Culture showed colon bacilli. The ureter was dilated, and later a nephropexy was done. The patient improved very rapidly, her blood pressure coming down to almost normal. She came back eight years later complaining of pain in her other kidney. A urological checkup showed her right kidney to be in good position, and to have a normal function. She had a stricture of her left ureter, upon the dilatation of which she was entirely relieved.

Mrs. E., white, age 40, had been an invalid for the past five years. During this time she had had sixteen operations, among which were: tonsillectomy; appendectomy; tubes, ovaries and uterus removed (operations done at different times); cholecystotomy; cholecystectomy; gastroenterostomy; etc. She had received very little benefit from these numerous surgical procedures. She was quite thin, weighing less than 100 pounds.

A cystoscopic examination showed a chronic cystitis and pyelitis with a marked ptosis of both kidneys. The function of the left kidney was good, while that of the right was very poor. Cultures showed a mixed infection, colon and staphylococci.

After treating her for several weeks with an indwelling ureteral catheter, glucose intravenously, etc., she improved sufficiently for her left kidney to be anchored. Fifteen days later the right kidney, which had been practically destroyed, was removed. The patient left the hospital some weeks after the second operation. Three months afterward she returned for a checkup, and it was found that she had gained twenty pounds and was feeling fine. She came for a second checkup six months later. She then weighed 140 pounds and had gone to work. Three years later she phoned me just to let me know that she was still feeling fine and had just married.

Mr. F., two days after a prostatic resection, became markedly distended. Very little urine was draining from his catheter, and he soon began to vomit a greenish yel-

low fluid with a very foul odor. A Levine tube was introduced and connected to a Wangenstein. Flatus enemas, pituitrin, and hot stupes were given and also glucose, both intravenously and by clysis. Caffein and digitalis were administered. After about twenty-four hours of this treatment, the urinary output began to increase, and the patient at once began to improve. This condition could have very easily been mistaken for an ileus.

Johnny Smith, a Negro boy, age 9, had been on the medical service for three weeks, being treated for a vague abdominal pain and digestive disturbance. As his progress was unsatisfactory, a G. I. was ordered. These pictures were entirely negative, but a large stone was found in his bladder. The boy had no further trouble after it was removed.

CONCLUSION

(1) Many abdominal symptoms are caused by lesions in the genitourinary tract.

(2) Where possible before operation, patients with chronic abdominal lesions should have a urological checkup.

(3) That diseases of the G. I. and genitourinary tract may both be present in the same patient.

(4) That, following operation upon genitourinary tract, there may be distention, nausea, vomiting, etc., which closely simulates intestinal obstruction. These patients are better treated by a Levine tube connected to a Wangenstein, flatus enemas, pituitrin, forced fluids, etc., rather than by an operation.

(5) That if the members of the various specialties would consult with each other more freely it would be of the greatest benefit to both the people and the medical profession.

DISCUSSION

DR. J. L. MORGAN (Memphis): Mr. Chairman and Gentlemen: I have enjoyed this most timely paper of Dr. Duncan's, and I certainly concur in everything that he has said and wish to add a little bit more to what he possibly forgot to say in trying to cover a large field in the limited time he had.

There is one condition which he has seen and I have seen and some of the rest of you, no doubt: a simple vasitis when it first begins from a gono-

coccus infection on the right side will quite often fool you and make you think you have an acute appendicitis. I have seen a few appendixes removed for such a condition. The following day the patient comes up with a definite epididymitis of the right side.

We know that the close proximity in association with the lower ureter and the tube in the female will quite often give you enough constriction of the lower ureter to give you definite ureteral colic and renal colic in some of these cases, and, of course, as the tube infection subsides, naturally your pain would also subside.

In dealing with such conditions, if we know that is the trouble, we certainly would not cystoscope the patient and subject her to traumatism which will give her a marked reaction with a definite renal colic which probably will last for three or four days.

Considering the subject of Dr. Duncan's paper, I recall one patient about sixty-five years of age who came into the hospital with what looked to be a definite kidney condition. The doctor sent the patient in with a diagnosis of cholelithiasis, and the internist to whom the patient was sent had him rayed and two shadows showed, one in the region of the gall bladder and one large shadow in the region of the right kidney. I was asked to cystoscope the patient and to determine whether or not the gallstones were giving the trouble, or the kidney stone. We found that the right kidney had no function at all, no urine coming from this side, and the bladder specimen urine was essentially negative; the pain was definitely in the right kidney region, so it was decided that more than likely since the kidney was dead there was no function, and essentially negative urine, this patient's condition must be coming from the gall bladder.

A surgeon was called and he decided, too, that it must be a gall bladder condition and advised operation, but the patient would not submit that day. The following day the patient had definite rigidity of the abdominal muscles and definite peritonitis. Anyway, the surgeon operated on the patient and, instead of finding either gall bladder or kidney condition, he found a retrocecal appendix which had ruptured, and the patient then had peritonitis. It is in just such conditions, these retrocecal appendixes, that a lot of us are fooled some of the time and most of us most of the time.

Abdominal pains, as Dr. Duncan said, will give us lots of worry. Many of these patients have been operated on, as he stated, and later found to have some kidney or ureteral condition. Certainly before any surgery is done with reference to intra-abdominal conditions, unless we know definitely what we are dealing with, the genitourinary tract should be checked for possible pathology, unless the surgeon feels that delay in operating might endanger the patient's life.

DR. W. A. BRYAN (Nashville): This paper presents some exceedingly important things both

from the standpoint of the genitourinary man and the surgeon, because it concerns abdominal surgery, and particularly from the standpoint of the patient. It does not do the general surgeon any particular good to remove an appendix and fail to cure his patient. We see those cases every now and then, and they say, "I was operated on, and then I was operated again, and then I was operated again, but I did not get any better." That does not help surgery. Worse, it does not help the patient. It does not do the genitourinary surgeon any good to fiddle around with the patient trying to make a diagnosis and allowing that patient, as Dr. Duncan has suggested, to die of an acute appendix.

It happens that these symptoms that patients present are very variable. If a patient with appendicitis always had a certain group of symptoms, it would be easy enough for any layman to diagnose appendicitis. If a patient with a ureteral obstruction, whatever be the nature of it and whatever may be the degree of it, always presented identical symptoms, he could diagnosis his own condition, and the only problem would be that of treatment.

You see a patient come in with an acute appendix who has perhaps a normal blood count and practically a normal temperature, and then on opening the abdomen you find that the appendix is not only definitely inflamed, but sometimes, as I have seen them, gangrenous.

On the other hand, Dr. Duncan suggested that the patient who has a ureteral obstruction may show no diagnostic, no clear-cut clinical evidence of it, and his urinalysis may show a normal urine, so that the problem of differentiation between the two is an exceedingly difficult one in certain cases.

I think one of the commonest errors that doctors make (I know it is one of the commonest ones that I make and one that it has been very difficult to avoid forgetting that the thing exists) is that we are satisfied when we find one definite pathology. When we find that this patient has appendicitis, we are satisfied, we operate on him, but he does not get well. When we find that the patient has a ureteral stricture or obstruction, we operate on him or treat the stricture, but the patient does not get well. That is because he had two things the matter with him at the beginning, and in cases where there is doubt I think it is wise that the patient should be told that we are sure this is the trouble and we are not sure about the other, or we are sure and that perhaps after one has been treated the other will require treatment.

Some of the men claim there is no such thing as chronic appendicitis. I do not know whether the term is correct or not, but there are people who suffer chronically from appendicitis; if you want to call it recurrent appendicitis, all right. Those are the cases particularly, I think, in which we had better be careful. I think ordinarily we could diagnose a real attack of acute appendicitis pretty satisfactorily, but in the case that has been

suffering long from a right-sided pain, a patient that has been having symptoms, no characteristic attacks, no violently acute attacks, but has been suffering, and you wonder whether he has a spastic small intestine or a spastic colon or an appendix that contains an enterolith and is trying to empty that enterolith out of itself, I think that is the case that it is wise for us to investigate and determine whether there is a ureteral complication or whether a blocked ureter or a partially blocked ureter is responsible for the whole trouble, or perhaps for only part of it.

I saw a case some years ago that had been diagnosed as a chronic appendix, and when she was investigated, it was found that she had a fibroid tumor of the uterus and that there was a nodule on the right side of the uterus pressing against the ureter. She had a perfectly normal appendix. Hysterectomy relieved her attacks entirely. That was a blockage from the outside. Blockage may be due to pathology in the wall of the ureter, it may be due to pathology on the outside of the ureter, it may be due to stone inside the ureter that is completely blocked.

DR. E. T. NEWELL (Chattanooga): Mr. President and Gentlemen: I think this is one of the most interesting and timely papers that we have had at this meeting, at least that I have had the privilege of hearing. There should be great interest in this paper, not only by the urologists and the general surgeons and the abdominal surgeons, but by the internists and the general practitioners, because we all have patients who have abdominal symptoms.

As I see it, when you have a patient who has abdominal symptoms, naturally the first thing you are going to think of is the abdomen. Then you should think of the chest, and in the chest you should think of the lung and of the heart, and then you should think of, as Dr. Duncan has said, the genitourinary system. So any abdominal pain brings under suspicion all three of these systems.

It is not infrequent to see a patient come in with pain in the right side of the abdomen, in the right lower quadrant, yet to be suffering from pneumonia, with parietal involvement of the pleura contiguous with the visceral pleura. Patients have been operated on in many instances for acute appendicitis where they had pneumonia, and some few of those patients have died.

Now we are seeing many cases of coronary occlusion, and we are also seeing quite a few cases with boardlike rigidity of the abdomen, with a leukocytosis, with all the symptoms of a ruptured gastric or duodenal ulcer or gall bladder or some other viscus, operated on for these conditions; when the trouble is simply a coronary occlusion.

Of course, you may say a coronary occlusion should be, on the face of it, easily recognized and diagnosed. If the occlusion is complete with a very slow pulse and shock, yes; but if it is a partial occlusion, nothing is more difficult to work out a diagnosis on and to separate from an ab-

dominal condition than partial occlusion of one of the vessels.

As has been so splendidly brought out by Dr. Duncan, the kinks and stones and hydronephroses, and so forth, in the genitourinary system will often mislead you, and give you symptoms of trouble in the gastrointestinal system.

I remember very well, some twenty years ago, operating on a case that one of the best surgeons in the state of Tennessee had previously removed the appendix. About a year afterward I removed a stone from the right ureter, and then he had relief of symptoms. It was a simple diagnosis to make as he already had his appendix removed and the X-ray revealed stone.

I had another very interesting case several years ago along the line suggested by the essayist. A patient came in with apparently an acute attack of appendicitis. His blood count was, we will say, 20,000 with a differential of eighty-five, and his temperature and pulse were what they should have been in a case that had had appendicitis for twenty-four hours, usual rigidity, etc. I made a diagnosis of acute appendicitis. *But* I X-rayed him and found a stone, the urine revealed microscopic blood in it. So then I knew he had a stone, and I *thought* he had appendicitis. I made a right rectus incision, or one a little further out over McBurney, went in, and removed the stone.

Now some urologists may think that was not good surgery or practice, but if I had told him I had left the stone and taken his appendix, I doubt that he would ever have believed that he had acute appendicitis. No drainage was necessary for the appendix. The recovery from both operations was uneventful.

In conclusion, as suggested by the essayist, when you have abdominal pain in a patient and you do not have to rush your patient to the operating room with a rush diagnosis, it is best that he should remain in the hospital for twenty-four to forty-eight hours for a thorough examination.

DR. TOM BARRY (Knoxville): I enjoyed Dr. Duncan's very practical paper. He has brought our attention to things which occur every day, and which at some times are very difficult to arrive at a diagnosis.

A thing to which he did not call attention of which I have seen two is perinephritic abscess with symptoms of abdominal diseases. Both of these individuals I saw had an abscess which pointed anteriorly with no history of any pain in the renal area.

Another patient that I have in mind, which is a rather rare condition (I think there have been less than ten cases reported), was a spontaneous rupture of a hydronephrotic kidney. This boy, fifteen years of age, had been operated two weeks previously for a gangrenous appendix. He was sent home on the sixth or seventh day in an ambulance, and while still in bed, he developed pain in his left abdominal region high up. He was sent back to the hospital and seen in consultation with

two or three excellent surgeons who concurred in a diagnosis of an abdominal phlegmon. They operated, finding nothing in the abdominal wall, went into the peritoneal cavity, which was filled with fluid of a urinous odor, aspirated this fluid, and found it was coming from the posterior peritoneum near the left kidney. This tear in the peritoneum was sutured, a stab wound was made in his loin, and a tube placed in a large hydronephrotic kidney holding about two quarts of urine. I believe this a most unusual condition, but one which we should keep in mind.

I differ from Dr. Bryan. I doubt seriously if any small fibroid will cause sufficient pressure on the ureter to give symptoms. I also doubt very seriously if any malpositions of the uterus will cause bladder symptoms. Certainly I never have seen one.

We see patients who have had pelvic operations to relieve bladder symptoms for, supposedly, malposition of the uterus. I doubt seriously its existence.

DR. G. MADISON ROBERTS (Chattanooga): Mr. President: I just want to leave one thought for the surgeons in dealing with those cases. While they sometimes think of the old saying that the main symptom of stone in the ureter is a little scar in the side in the region of the appendix, just forget about that, because we urologists do one thing: if you send the case to us and we find a stone or some obstruction in there that is causing trouble, we just merely mention to you the fact that he has these conditions, but you take the responsibility as to whether or not this patient had appendicitis, and you have to use your own judgment as to that. But keep one thing in mind, that while it is regrettable to remove an appendix for a stone and have the pain recur afterwards, it might be a catastrophe if you removed the stone and left the appendix to rupture at a later date.

This paper is of special interest to both the general practitioner and general surgeon, and I think is very timely.

DR. W. A. BRYAN (Nashville): I have to get up here and defend myself against my good friend, Dr. Barry. I have the advantage over him. I was there when I operated on this case, and he was not. That is the first advantage that I have. The woman had been having these symptoms definitely for a long time. She was not a neurotic. There was a tumor in the pelvis. The tumor lay right in the region over the right ureter. The woman definitely had suffered pain, a lot of pain. She got well.

Of course, I do not know that I cured her. Just seeing me might have helped her (laughter), it sometimes does, you know, but I am inclined to think that removal of that tumor did it.

Dr. Barry says he never saw a patient in which the bladder was upset by position of the uterus or uterine tumor. Is that right, Dr. Barry?

DR. TOM BARRY: That is right.

DR. BRYAN: I had a woman who at hog-killing time lifted a tub of sausage (she had been perfectly well and all right), and when she did she felt something slip in her pelvis. She did not know she had any trouble at all. She immediately wanted to urinate; she could not. She sent for the doctor. He immediately tried to catheterize her, and with the greatest difficulty did catheterize her. She had a fibroid tumor that had slipped down under the symphysis and caught the urethra between the symphysis and the tumor, and she could not void. She voided after we removed the tumor and is still voiding.

A third case—I saw a woman who had a fibroid tumor that would weigh, I would say, fifteen pounds. That fibroid tumor originated low in the uterus behind, and when we operated on her (she looked to be about fourteen months pregnant), the ureter swung up over the fibroid tumor and was lying against the anterior abdominal wall.

DR. W. S. ANDERSON (Memphis): I just want to back up Dr. Bryan on what he said about

the involvement of the bladder with tumors. I had a case lately of that same type with a nodule of a uterine myomata slipping down under the symphysis and pressing on the urethra. This woman had catheterized herself for three or four months. She could not possibly void until this tumor was removed. We found this nodule pressing right against the urethra. When the tumor was removed, she had no subsequent trouble.

DR. I. G. DUNCAN (closing): Gentlemen: This reminds me somewhat of a story I once read of a young surgeon who went up to one of the big medical meetings and read a paper on cholecystectomy versus cholecystotomy, and when he got through, Mayo got up and had a lot to say about it, and then Crile got up and contradicted what Mayo had to say, then some of the big surgeons from New York, Chicago, and other large cities got up and they had a lot to say, and after a great display of eloquent oratory for an hour, they finished and called on this young fellow to close. He just got up and said, "Why, gentlemen, I'm very glad indeed that I brought the can opener to the party." (Laughter.)

THE JOURNAL

OF THE

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H. H. SHOULDERS, M.D., Editor and Secretary

DECEMBER, 1936

EDITORIAL

THE ANNUAL CONFERENCE OF SECRETARIES AND EDITORS

The annual conference of secretaries and editors was held in the assembly room of the new home of the American Medical Association, Chicago, November 16 and 17.

Officers of state associations other than secretaries and editors are invited to attend these conferences by the American Medical Association. A number have attended. Our own president, Dr. W. L. Williamson, attended the conference this year.

This conference has grown to large dimensions. It is logical that it should grow.

There are so many problems which call for coordinated action on the part of medicine and so many new issues are arising from time to time, which are separate and apart from the science of medicine but intimately linked up with the practice of medicine, that such conferences are necessary to achieve a common understanding.

There were several outstanding numbers on the program. One to which brief reference will be made was by Dr. Thomas Parran, Surgeon General of the United States Public Health Service, on the subject "United States Public Health Service and the Social Security Act."

We were very favorably impressed with the frankness of the statements made by the Surgeon General. He made it plain that he has no fixed idea or plan under which the federal government is to become

involved in the practice of medicine. He emphasized the need for cooperation between private practitioners and health authorities—a proposition to which we all subscribe wholeheartedly. He made it plain that he is in favor of the public health service extending its activities beyond the domain it has occupied heretofore, but he did not and, of course, could not give the details of any plan of extension.

We formed the idea from his utterances that these extensions will be along the lines of cooperative effort with the practitioners of medicine in certain special fields. For example, in syphilis and in certain phases of the treatment of pneumonia.

In years past we have had many contacts with the United States Public Health Service. This service has enjoyed the confidence and respect of the medical profession of America.

One of the attributes of the service has been that it never went beyond its proper sphere of activity. For example, the service would go into a state only when certain conditions presented and when properly requested.

The observance of these fundamental principles and proprieties has not, in our opinion, hindered or retarded the usefulness of the department.

It has been occupied with work, in the main, which required the use of executive authority. No one could estimate the advantage that we have enjoyed as a result of the protection against the invasion of this country by plagues of various sorts which might have been brought by persons and cargoes from other lands but for the service of this department in our ports.

The work of this department in research has been outstanding. In the control of the spread of contagions from state to state the work has been excellent.

The branching away from these executive functions into the field of practice or the treatment of disease non-contagious involves some dangers, of course, because once the activities have been extended in one direction touching the treatment of common conditions, on whatever ground it is justified, it is an easy matter to extend the

activities to whatever extent the person in authority may decide to extend them. Again the extensions may be of tremendous advantage if they are curbed in such a manner as to create an automatic limitation to the sphere of extension. There may be need for such extension.

These extensions if carried forward must be executed with the utmost prudence and caution. In our opinion superior qualities in the nature of executive ability must be possessed by the executive who sponsors such extensions.

We have faith that the present Surgeon General possesses these qualities.

SOME OF THE ACTIVITIES OF OTHER STATES

The matter of administering medical care to indigents by the various agencies that have been engaged in such endeavor is bringing about a state of marked confusion.

There are many agencies administering medical benefits of one sort or another to indigent persons. For example, most cities of our state have charity hospitals supported by the taxpayers and staffed by the practitioners of the community.

Many clinics are in operation under the auspices of churches and other organizations.

Some clinics are operated by health departments. In the field of crippled children alone there are the federal government, the state government, the Junior League, and the Shrine.

Some of these organizations attempt to apply their energies to the indigent only—others do not.

There seems to be a wide division of opinion as to what constitutes indigency. There is a wide difference of opinion even among social service workers, to say nothing of the slant of the politician anxious for patronage.

It seems to us that the State of Michigan has taken one very forward step in this regard. The steps they have taken there are based on the fact that there are two questions to be considered in connection with every person who makes application for free medical and hospital care.

Question No. 1 to be answered is this: *Is this person actually indigent?*

Question No. 2 is this: *Does the person actually need medical or hospital care?*

The answer to Question No. 1 can be determined by any person with moderate experience in social welfare work.

Question No. 2 can be answered only by the proper sort of a medical board.

Steps have been taken to set up two boards in each county—one composed of lay people who pass on the question of indigency, and the other composed of members of the local medical society who pass on the question of medical or hospital need.

When an application is approved by both these boards the county judge is then in position to certify the individual. For example, in the case of a crippled child an application is made to the judge for hospitalization and treatment. The judge refers the case to Board No. 1 to answer the question of indigency. When answered in the affirmative the case is referred to Board No. 2. The medical board determines the need for medical care and hospitalization.

There are indications that a large number of people are to receive free medical service from one source or another for a long time to come.

There is no doubt but there is urgent need for such free service and the medical profession has never offered a complaint against rendering free services where warranted in all respects, but there is no doubt but there is urgent need for some method of screening whereby those who are not entitled to free care do not commit a fraud on the profession and the taxpayers.

There is, therefore, urgent need for a sensible basis of classification and for logical steps to determine the proper classification of our people with respect to these free services.

CONTENTS OF THIS ISSUE

In addition to the usual material in the JOURNAL there appears the roll of members as of December 10, 1936.

The roll is arranged in alphabetical order according to counties, and the counties are arranged in alphabetical order.

A few years ago we published a census of doctors in the state. The census contained a great deal of information, in addition to the names and addresses of non-members. A number of members recently have requested copies. Others have made inquiry as to when another census would be published. Our supply of these reprints is exhausted and the compilation of such a census is very expensive. It is very expensive to compile and very expensive to print. During the depression prudence and economy have demanded that unnecessary expenditures be eliminated. This is the reason the publication of such a census was discontinued. We hope the published roll of members will be of great practical usefulness to the membership. It is suggested that each member keep this one issue of the JOURNAL if he does not keep all others.

Attention is called to the fact that the roll of the association contains 1,557 names. This is the largest number the roll has contained in the past few years.

A Christmas Greeting!

There are enrolled at the headquarters office of the Tennessee State Medical Association 1,557 members. This is the largest enrollment since the depression began.

The office force wishes to extend a Christmas greeting to each member and express our best wishes for the coming year.

H. H. SHOULDERS,
W. M. HARDY,
WILLARD BATEY.

DEATHS

Dr. Herschel Ezell, Nashville; University of Tennessee, Medical Department, 1911; aged 48; died November 26.

NEWS NOTES AND COMMENTS

More than two hundred members of the Nashville Academy of Medicine were guests of Nashville Surgical Supply Company at a banquet at the Noel Hotel on the evening of November 24.

Mr. Henry W. Cooper, president of the Nashville Surgical Supply Company, gave the welcoming address and the response in behalf of the doctors was given by Dr. Marvin M. Cullom. A feature of the evening was the distribution of several valuable prizes to the holders of the lucky numbers, and each guest was presented with a gift package.

The banquet has become an annual affair, and the attendance of the medical profession is a compliment and a tribute to the Nashville Surgical Supply Company.

The meeting was presided over by Dr. H. S. Shoulders, president of the academy.

WOMAN'S AUXILIARY

President-----Mrs. Theodore Morford
Nashville

President-elect-----Mrs. W. T. Black
Memphis

Press and Publicity-----Mrs. Oscar Nelson
Nashville

It is the happy privilege of your Press and Publicity Chairman to be one of the very first to wish for each of you, both as auxiliaries and as individuals, a very joyous Christmas and a New Year filled with many blessings. And I hope that the Press and Publicity Chairman of each county will make the New Year's resolution of the unbreakable sort to continue to send in news of your meetings and doings promptly, so that we may have the pleasure of continuing the acquaintance begun so delightfully through this column.

RUTHERFORD COUNTY

The Woman's Auxiliary to Rutherford County and Stones River Academy of Medicine held its November meeting at the home of Mrs. W. T. Robison, with Miss Mary

Hall as co-hostess. Following the general theme "Contributions Women Have Made to Medicine," the paper of the afternoon was an interesting account of Jane Todd Crawford and her heroic contribution to surgery through submission to the first ovariectomy in history, in 1809. The paper was given by Mrs. M. B. McCrary. A social hour followed the adjournment of the meeting.

KNOX COUNTY

The Benefit Bridge Party given by the Woman's Auxiliary to the Knox County Medical Society on October 21 was pronounced a huge success. It was given at the Andrew Johnson Hotel and there were four hundred women present, to enjoy the game and compete for the attractive prizes. In November the meeting was in the form of a Membership Tea at the home of Mrs. Joe Raulston.

DAVIDSON COUNTY

The Woman's Auxiliary to the Nashville Academy of Medicine and Davidson County Medical Society held its regular monthly meeting on November the sixth at the Y. W. C. A. Several new members were introduced and welcomed into the group. Mrs. W. R. Cate, Program Chairman, gave an outline of the proposed programs for the year, the general theme of study chosen being "Health Conditions in Nashville and Davidson County." Dr. H. E. Meleney of Vanderbilt University Medical School gave a most instructive talk on "Health Problems in Nashville," and the meeting was then thrown open for questions by the members, which Dr. Meleney answered.

MEDICAL SOCIETIES

Anderson County:

The Anderson County Medical Society members and their wives were guests of Dr. and Mrs. H. D. Hicks at a very delightful dinner Tuesday night. Dr. Hicks has been a highly esteemed physician of Clinton for many years. In honor of these years of service and the enjoyable dinner served

doctors, *Dr. Hicks was unanimously elected president* of the society for the year 1937. Other new officers for the new year, elected at business meeting following the dinner, were *Dr. J. Sam Taylor, vice-president; Dr. James Hall, secretary-treasurer; Dr. W. B. Barton, corresponding secretary; Dr. Dickerson, Coal Creek*, the retiring president, will be the delegate to the state medical meeting in April. The other members of the society with their wives, who were present, are Dr. H. G. DuBard, Norris; Dr. O. E. Ballou, Clinton; Dr. H. W. Hollingsworth, Divonia; Dr. James Cox, Coal Creek; Dr. Thos. Jennings, Clinton; Dr. H. S. Rule, Clinton; and Dr. Trent Huff also Clinton.

There were several visiting doctors, namely, Dr. and Mrs. L. A. Haun, Dr. and Mrs. E. H. Ford, Dr. and Mrs. Bob Wood, Dr. and Mrs. J. C. Morris, all of Knoxville. Dr. Condon Green, dentist, Clinton, and Mr. and Mrs. Bush, Clinton, friends of Dr. and Mrs. Hicks.

Davidson County:

November 10 — "Follow-up Study of Thirty-Five Cases of Jake Paralysis," by Dr. M. L. Weber. Discussion opened by Dr. Hugh Morgan.

November 17 — "Non-shadow Casting Renal and Ureteral Calculi," by Drs. J. C. Pennington and Earl Lowry. Discussion opened by Dr. C. F. Anderson. Case reports by Dr. J. O. Manier.

November 24 — The Nashville Surgical Supply Company gave a banquet in honor of the Nashville Academy of Medicine.

December 1—"Case Report: Interstitial Tubal Pregnancy. Hysterectomy with Recovery," by Dr. Carl Crutchfield. Discussed by Drs. Lucius E. Burch and W. B. Anderson.

"Case Report: Gas Gangrene of Abdominal Wall," by Dr. Z. Linney. Discussed by Dr. S. T. Ross.

December 8 — Election of officers and delegates for the coming year took the place of the scientific program.

Dyer, Lake, and Crockett Counties:

Members of the society were guests of

the Baird-Brewer Hospital at a dinner on December 2. Immediately after dinner the following papers were read:

"Undulant Fever," by Drs. J. B. Cochran and E. H. Baird.

"Classification and Treatment of Anemia," by Dr. Conley Sanford, Memphis.

Officers of the society for the year 1937 were elected as follows:

President—J. P. Baird, Dyersburg. Secretary-treasurer—C. L. Denton, Dyersburg. Vice-president for Dyer County — B. G. Marr, Dyersburg. Lake County — W. L. Sumners, Ridgely. Crockett County—J. O. McKinney, Friendship.

Representative to State Medical Society and Alternate: Dyer County—J. D. Brewer, Dyersburg; J. G. Price, Dyersburg. Lake County—W. L. Sumners, Ridgely; R. W. Griffin, Tiptonville. Crockett County—J. O. McKinney, Friendship; W. H. Stallings, Friendship.

Board of Censors: N. S. Walker, Dyersburg; R. W. Griffin, and J. O. McKinney.

Greene County:

The regular monthly meeting of the Greene County Medical Society was held December 1.

At this meeting officers for the ensuing year were elected and installed. Dr. W. T. Mathes was made president, Dr. M. A. Blanton, vice-president, and Dr. I. E. Phillips, secretary-treasurer.

After the election of officers Dr. Mathes read a paper entitled, "The Future of the General Practitioner."

The following members were present: Drs. L. E. Dyer, L. E. Coolidge, Hal Henard, C. P. Fox, I. E. Phillips, N. H. Crews, R. S. Cowles, Haskell Fox, W. T. Mathes, F. C. Britton, C. P. Fox, Jr., and M. A. Blanton.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

A meeting was held in Waynesboro November 24th. The following papers were read:

"The Commoner Diseases of the External Ear," by Dr. J. W. Danley, Lawrenceburg. Discussion led by Dr. O. A. Kirk, Linden.

"Doctor Quack, Practicing Psychologist," by Dr. Paul Wylie, Hohenwald. General discussion by all members present.

"The Treatment of Lobar Pneumonia," by Dr. Otis A. Warr, Memphis. Discussion led by Dr. T. J. Stockard, Lawrenceburg.

"Abdominal Lesions Producing Gastric Disturbances," by Dr. R. L. Sanders, Memphis.

Officers for the new year were elected: President, Dr. Otis Whitlow, Savannah. Vice-president for Hardin County, J. V. Hughes, Savannah; Lawrence County, Dr. V. H. Crowder, Lawrenceburg; Lewis County, Dr. Paul Wylie, Hohenwald; Perry County, Dr. J. W. Frost, Linden; Wayne County, Dr. J. T. Keeton, Clifton. Secretary-treasurer, Dr. O. H. Williams, Savannah. Delegate to state meeting, Dr. O. H. Williams, Savannah; alternate, Dr. W. E. Boyce, Flat Woods.

Knox County:

November 17—"The Problem of Tuberculosis in the Aged," by Dr. J. B. Naive.

November 24 — "Lateral Sinus Thrombosis with Case Reports," by Dr. R. G. Reaves.

December 1 — "High Frequency in the Treatment of Sinusitis," by Dr. E. H. Ford.

Robertson County:

At the meeting held in Springfield on November 17th, the following doctors from Nashville appeared on the program: Dr. W. R. Cate, who spoke on "Some Aspects of Heart Disease," and Dr. Hamilton Gayden, whose subject was "Perineal Repair."

The following officers for 1937 were elected: Dr. E. W. Adair, president, Springfield; Dr. W. P. Stone, vice-president, Springfield; Dr. J. E. Wilkison, secretary-treasurer, Springfield.

Sullivan-Johnson Counties:

Generally the December meeting of our society is given over to the election of officers and other routine business. On our regular night of meeting, December 2, the staff of the Holston Valley Community Hospital are holding another one of the in-

COMMITTEES

The following is a list of the standing committees of the Tennessee State Medical Association provided for in the constitution and by-laws and appointed by the proper authority, together with some special committees appointed under the authority of a resolution by the House of Delegates.

Some of the committees are appointed for a definite period. In such instances the appointment of the committeeman expires with the meeting of the House of Delegates in the year stated opposite his name.

COMMITTEE ON SCIENTIFIC WORK

H. H. Shoulders, Chairman, Nashville.
A. F. Cooper, Memphis.
Frank Harris, Chattanooga.
A. H. Lancaster, Knoxville.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

L. W. Edwards, Chairman, Nashville (1939).
E. W. Cocke, Bolivar (1941).
Battle Malone, Memphis (1940).
Tom Barry, Knoxville (1938).
T. R. Ray, Shelbyville (1937).

LIAISON COMMITTEE

W. C. Dixon, Chairman, Nashville (1941).
W. P. Wood, Knoxville (1940).
Hiram A. Laws, Chattanooga (1939).
Tom Mitchell, Memphis (1938).
J. L. Raulston, Knoxville (1937).

STATE TUBERCULOSIS HOSPITAL COMMISSION

W. S. Rude, Chairman, Ridgetop.
O. N. Bryan, Nashville.
C. M. Oberschmidt, Memphis.
J. L. Hamilton, Chattanooga.

HOSPITAL COMMITTEE

D. R. Pickens, Chairman, Nashville.
E. H. Baird, Dyersburg.
H. Quiggs Fletcher, Chattanooga.
Kyle Copenhaver, Knoxville.
H. B. Everett, Memphis.
Lee Gibson, Johnson City.

COMMITTEE ON INSURANCE

A. F. Cooper, Chairman, Memphis.
C. M. Hamilton, Nashville.
S. R. Miller, Knoxville.

COMMITTEE ON MEDICAL DEFENSE

S. R. Miller, Chairman, Knoxville.
H. B. Everett, Memphis.
H. M. Tigert, Nashville.

ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

W. P. Wood, Chairman, Knoxville.
W. M. Searight, Memphis.
L. W. Edwards, Nashville.

COMMITTEE ON EDUCATION

O. S. Warr, Chairman, Memphis (1938).
R. B. Wood, Knoxville (1938).
W. G. Kennon, Nashville (1937).
J. Marsh Frere, Chattanooga (1937).
W. O. Baird, Henderson (1939).
J. M. Lee, Nashville (1939).

The following committees are expected to serve under the supervision of the Committee on Education:

(A) COMMITTEE ON MATERNAL WELFARE

J. R. Reinberger, Chairman, Memphis.
M. S. Lewis, Nashville.
H. B. Hewitt, Chattanooga.
Andrew Smith, Knoxville.

(B) COMMITTEE ON CHILD WELFARE

W. D. Anderson, Chairman, Chattanooga.
Oliver Hill, Knoxville.
H. G. Bradley, Nashville.
W. L. Rucks, Memphis.

(C) CANCER COMMITTEE

Ralph Monger, Chairman, Knoxville.
S. J. Sullivan, Cleveland.
Howard King, Nashville.
H. S. Shoulders, Nashville.
J. W. McClaran, Jackson.
Frank Smythe, Memphis.

(D) COMMITTEE ON PHYSICAL THERAPY

A. H. Meyer, Chairman, Memphis.
W. E. Van Order, Chattanooga.
J. F. Hamilton, Memphis.
R. W. Billington, Nashville.
J. P. Gilbert, Nashville.

(E) COMMITTEE ON POSTGRADUATE INSTRUCTION IN OBSTETRICS

Jas. R. Reinberger, Chairman, Memphis.
Franklin B. Bogart, Chattanooga.
O. W. Hyman, Memphis.
John M. Lee, Nashville.
J. O. Manier, Nashville.
Otis S. Warr, Memphis.
John B. Youmans, Nashville.

LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. W. L. Williamson, 915 Madison Avenue, Memphis.
 Vice President for West Tennessee—Dr. J. E. Powers, Jackson.
 Vice President for Middle Tennessee—Dr. J. O. Walker, Franklin.
 Vice President for East Tennessee—Dr. Lee K. Gibson, Johnson City.
 Secretary—Editor—Dr. H. H. Shoulders.
 Assistant Secretary—Editor—Dr. W. M. Hardy.

TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.
 Dr. A. F. Cooper, Goodwyn Institute Building, Memphis.
 Dr. E. R. Zemp, Walnut Street, Knoxville.
 Dr. Franklin B. Bogart, Medical Arts Building, Chattanooga.
 Dr. John B. Steele, Volunteer Building, Chattanooga.

COUNCILORS

First District—Dr. L. E. Dyer, Greenville.
 Second District—Dr. S. R. Miller, Knoxville.

Third District—Dr. Hiram A. Laws, Jr., Chattanooga.
 Fourth District—Dr. J. T. Moore, Algood.
 Fifth District—Dr. John W. Sutton, Petersburg.
 Sixth District—Dr. L. W. Edwards, Nashville.
 Seventh District—Dr. C. D. Walton, Mt. Pleasant.
 Eighth District—Dr. J. R. Thompson, Jackson.
 Ninth District—Dr. E. H. Baird, Dyersburg.
 Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—

Dr. E. G. Wood, Knoxville; East Tennessee.
 Dr. H. H. Shoulders, Nashville; Middle Tennessee.
 Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—

Dr. E. T. Newell, Chattanooga; East Tennessee.
 Dr. J. O. Manier, Nashville; Middle Tennessee.
 Dr. E. C. Ellett, Memphis; West Tennessee.

OFFICERS OF COUNTY MEDICAL SOCIETIES

COUNTY	PRESIDENT	VICE PRESIDENT	SECRETARY-TREASURER
Anderson	Edward Dickson, Coal Creek	W. B. Barton, Briceville	J. S. Hall, Clinton
Bedford	Alfred Farrar, Shelbyville	J. W. Reed, Belfast	W. H. Avery, Shelbyville
Blount	L. C. Olin, Maryville	H. A. Callaway, Maryville	W. C. Crowder, Maryville
Bradley	J. L. McClary, Cleveland	W. C. Stansberry, Charleston	Claud Taylor, Cleveland
Campbell	A. A. Baird, Pruden	M. L. Davis, Caryville	R. J. Buckman, LaFollette
Carroll	E. W. Hillsman, Trezevant		J. H. Williams, McKenzie
Carter	E. T. Pearson, Elizabethton	J. B. Shoun, Elizabethton	E. L. Caudell, Elizabethton
Chester, Henderson, and Decatur	C. H. Johnson, Lexington	J. L. McMillen, Decaturville	L. C. Smith, Henderson
Cooke	Drew A. Mims, Newport	Chas. Ruble, Newport	J. E. Hampton, Newport
Cumberland	E. W. Mitchell, Crossville		V. L. Lewis, Crossville
Davidson	H. S. Shoulders, Nashville	H. L. Douglas, Nashville	J. P. Gilbert, Nashville
Dickson	L. F. Loggins, Charlotte		R. P. Beasley, Dickson
Dyer, Lake, Crockett	R. C. Newkirk, Tiptonville	John E. Frazier, Newbern (Dyer)	C. L. Denton, Dyersburg
Fayette-Hardeman	L. D. McAuley, Oakland	R. W. Griffin, Tiptonville (Lake)	
Fentress	C. A. Collins, Wilder	Leon Pope, Grand Junction	A. Richards, Bolivar
Franklin	W. F. Smith, Decherd	A. H. Crouch, Forbus	J. P. Sloan, Jamestown
Gibson	L. H. Montgomery, Trenton	A. P. Smith, Winchester	John M. Hardy, Sewanee
		H. P. Clemmer, Milan	F. L. Roberts, Trenton
			Roscoe Faulkner, Ass't Sec., Trenton
Giles	R. E. Warren, Pulaski	J. G. Waldrop, Lewisburg	T. F. Booth, Pulaski
Greene	N. H. Crews, Greeneville	R. S. Cowles, Greeneville	C. P. Fox, Jr., Greeneville
Grundy	U. B. Bowden, Pelham	O. H. Clements, Palmer	T. F. Taylor, Monteagle
Hamblen	P. L. Brock, Morristown	E. E. Howell, Morristown	J. F. Campbell, Morristown
Hamilton	D. M. Williams, Chattanooga	W. A. Gilbert, Chattanooga	J. Marsh Frere, Chattanooga
Hardin, Lawrence, Lewis, Perry, and Wayne	W. E. Boyce, Flatwoods	J. H. Taylor, Morris Chapel (Hardin)	O. H. Williams, Savannah
		J. W. Danley, Lawrenceburg (Lawrence)	
		Paul Wiley, Hohenwald (Lewis)	
		W. E. Turner, Lobelville (Perry)	
		D. L. Woods, Waynesboro (Wayne)	
Haywood	A. H. Sorrell, Brownsville	John C. Thornton, Brownsville	Roy M. Lanier, Brownsville
Henry	A. F. Paschall, Puryear	Eloy Scruggs, Paris	R. Graham Fish, Paris
Hickman	L. F. Pritchard, Only	C. V. Stephenson, Centerville	W. K. Edwards, Centerville
Humphreys			W. W. Slayden, Waverly
Jackson	J. D. Quarles, Whitleyville	R. C. Gaw, Gainesboro	F. B. Clark, Gainesboro
Knox	M. S. Roberts, Knoxville	John R. Smoot, Knoxville	Jesse C. Hill, Knoxville
Lauderdale	Thos. F. Pipkin, Henning	J. H. Nunn, Ripley	Thos. E. Miller, Ripley
Lincoln	H. K. Alexander, Fayetteville	R. E. McCown, Fayetteville	M. F. Brown, Fayetteville
Macon	D. D. Howser, Lafayette	P. East, Lafayette	J. Y. Freeman, Lafayette
Madison	J. C. Pierce, Mercer	John E. Powers, Jackson	S. M. Herron, Jackson
Maury	D. B. Andrews, Columbia	O. C. Fowler, Spring Hill	C. D. Walton, Mt. Pleasant
		H. C. Busby, Columbia	
McMinn			David F. Seay, Englewood
McNairy	John R. Smith, Selmer	G. B. Curry, Selmer	H. C. Sanders, Selmer
Monroe	T. M. Roberts, Sweetwater	J. A. Hardin, Sweetwater	W. J. Cameron, Sweetwater
Montgomery	F. A. Martin, Cumberland City	R. M. Workman, Clarksville	Philip L. Lyle, Clarksville
Obion	W. B. Harrison, Union City	Ilar Glover, Union City	Frank B. Kimzey, Union City
Overtown			A. B. Qualls, Livingston
Polk	W. Y. Gilliam, Copperhill	W. C. Strauss, Copperhill	F. O. Geisler, Isabella
Putnam	J. Fred Terry, Cookeville	W. A. Howard, Cookeville	Thurman Shipley, Cookeville
Roane	F. D. Owings, Rockwood	T. L. Bowman, Harriman	W. W. Hill, Harriman
Robertson	W. F. Fyke, Springfield	E. W. Adair, Springfield	W. S. Rude, Ridgely
Rutherford	J. D. Hall, Readyville	B. W. Rawlins, Murfreesboro	J. A. Scott, Murfreesboro
Scott			D. M. Woodward, Winona
Sevier	R. J. Ingle, Sevierville	C. P. Wilson, Sevierville	R. C. Kash, Sevierville
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Wilson	L. L. Tilley, Lebanon	M. H. Wells, Watertown	R. B. Gaston, Lebanon

stitutes which many of us have enjoyed and to which the members of this society are invited. Dr. Otis S. Warr of the University of Tennessee is to be the leader and his topic is to be "Acute Chest Conditions."

There will be an afternoon clinical session beginning at 4:30 with presentation of case histories and patients by members of the staff.

At 6:30 we of the county society will meet at the Kingsport Inn for dinner and our short business meeting.

In the evening Dr. Warr speaks at the hospital auditorium on the above topic.

If you have not paid your dues for the current year please do so before this meeting so that your secretary will be able to submit 100 per cent membership report.

T. R. BOWERS, *Secretary*.

Washington County:

The society met on December 3. The following papers were read:

"Prostatic Obstructions," by Dr. J. D. Neal, Knoxville. Discussion opened by Drs. Budd, Matthews, and West.

"Intravenous Urography as an Aid in Diagnosis," by Dr. H. B. Cupp. Discussion opened by Drs. Budd and Hankins.

OTHER MEDICAL SOCIETIES

VANDERBILT MEDICAL SOCIETY

1. Report of Case: "Methyl Chloride (Refrigerator Gas) Intoxication," Dr. Albert Weinstein.

Two white men, while repairing a leaking air-conditioning apparatus which used methyl chloride as the refrigerant, were poisoned by that agent. They exhibited many of the characteristic findings of this clinical syndrome and their urines were found to contain formic acid. Both recovered, one after a very stormy course. The various chemical mechanisms involved are of interest. The hydrolysis of the gas within the body results in the formation of methyl alcohol and chloroform and this explains the symptomatology. The hazard of the gas is real, in view of the continued and increasing widespread use of air condition-

ing and refrigeration. It is desirable that medical and legislative bodies map out plans for supervision of this industry.

Case discussed by Drs. Morton Mason, Henry Meleney and Hugh Morgan.

2. "The Effect of Estrogenic Substances Upon the Pituitary, Adrenals and Ovaries," Dr. E. T. Ellison and Dr. John C. Burch.

A comparison was made of the effects of trihydroxyestrin, dihydroxyestrin, ketohydroxyestrin, hydroxyestrin benzoate and emmenin upon the pituitary, ovaries and adrenals of normal and hypophysectomized rats. The pituitaries, ovaries and adrenals were weighed and studied histologically. The estrogenic substances, when injected in sufficient amounts, caused hypertrophy of pituitary, adrenals and ovaries in the normal rat. The hypertrophy of the ovary is due to the formation of corpora lutea comparable to those found in normal pregnancy. None of these effects were found in hypophysectomized animals. The effects of these substances upon the ovaries and adrenals are dependent upon the presence of the pituitary.

Paper discussed by Drs. Karl E. Mason and Dr. John C. Burch.

3. "The Problem of Infection as Presented by Bacterial Invasion of the Chorio-allantoic Membranes of Chick Embryos," Dr. E. W. Goodpasture and Miss Katherine Anderson.

Inoculation of the chorio-allantoic membrane of chick embryos with pure cultures of pathogenic bacteria is a practical method for studying many problems of infection, especially the early stages of invasion. It is indicated in this survey of the method of studying bacterial infection in chick embryos that many pathogenic bacteria find in either mesodermal cells (fixed or mobile) or epithelial cells, or both, favorable and possibly necessary media for invasion of the living host. In these instances phagocytosis instead of representing resistance to infection actually favors it. Among those pathogenic bacteria which are able to utilize a living intracellular environment for growth are *S. viridans*, *A. aerogenes*, *E. typhi*, *B. abortus*, and *B. tuberculosis* (avian). *S. aureus* and *S. hemolyticus* may

be in part destroyed by the phagocytes of the embryo, and they appear to be incapable of growing in an intracellular medium in this host.

Paper discussed by Drs. Roy C. Avery and Oscar Bloch.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Blood Pressure and Pulse Variation During and Following Spinal Anesthesia. Livingstone, Davies, and Frisch. *Current Researches in Anesthesia and Analgesia*. September-October, 1936.

A study was made upon a series of four hundred spinal anesthetics on patients from fourteen to ninety years of age, covering a wide range of operative procedures, twenty-five cases requiring supplementary inhalation anesthesia. The technique was that followed by Tovell. Blood pressure fall may be unrecognized if there is not a frequent reading, as it may fall and return to normal.

Fall of blood pressure is frequent in the first fifteen minutes. If the pulse pressure remained nearly constant, the pulse would not indicate the fall. Twenty-seven patients within fifteen minutes showed slow pulse presenting faintness, nausea, pallor, or combined pallor and cyanosis, increased perspiration, cardiac pain, or fibrillation. Forty patients from fifteen to thirty minutes had fall of blood pressure, slow pulse, and associated symptoms. Of fourteen patients in thirty to sixty minutes, thirteen of them had increased or unchanged pulse rate, one had additional symptoms.

After one hour two patients had fall of blood pressure, decreased pulse rate, and associated symptoms. Seven patients had fall of blood pressure, increased pulse rate, and vomiting from ten minutes to ten hours after the operative procedure had been ended. The judicious use of ephedrine, oxygen, and carbon dioxide is indicated to combat these untoward symptoms. Fall of blood pressure with slowing of the pulse is generally associated with more or less alarming symptoms.

INTERNAL MEDICINE

By J. W. McELROY, B.A., M.D.
915 Madison Avenue, Memphis

Hypoparathyroidism—The Treatment of Chronic Cases. R. H. Freyberg, M.D., R. L. Grant, Ph.D., and M. A. Robb, M. S., Ann Arbor, Mich. *J. A. M. A.*, Vol. 107, No. 22, November 28, 1936.

This article with the report of two cases of

chronic hypothyroidism gives an excellent resume of the calcium and phosphorus metabolism and the influence of the parathyroid hormone on the metabolism of these substances. There is also given an excellent outline for the management of cases of chronic postoperative hypoparathyroidism, together with a discussion of the relative merits of such management.

The conclusions at which they arrive from the extensive and controlled studies on the two patients with chronic postoperative hypoparathyroidism are:

1. To compensate most satisfactorily for the altered state of calcium and phosphorus metabolism, the intake of the phosphorus should be low and the calcium intake high. This can best be accomplished by feeding a low phosphorus diet (which will also be low in calcium) and large amounts of calcium salt other than phosphate. The commonly high calcium (milk) diet is undesirable because of its high phosphorus content.

2. A solution of calcium lactate, in amounts sufficient to provide from 1.5 to 2.5 grams of calcium daily, is in many respects the best method of administering calcium.

3. Vitamin D in large amounts is of definite value and should be given.

4. Hydrochloric acid and magnesium carbonate, as used, were not beneficial. However, others think these substances are beneficial.

5. Thyroid substance is of no value unless hypothyroidism also exists.

6. Although substitution therapy, consisting of the subcutaneous injection of parathyroid extract, is the most specific treatment, there are serious objections to the long continued use of this extract. If the successful management can be accomplished without the use of parathyroid extract, it is desirable not to use it. These studies show that patients with severe chronic hypoparathyroidism can be maintained in a state of good, if not perfect, health by the treatment outlined, without the use of parathyroid extract.

The effectiveness of parathyroid extract when injected intravenously (not without danger) into a patient who had become "immune" to the extract injected subcutaneously suggests that "refractiveness" to parathyroid extract is due to a localization and destruction of the active principle at the site of its injection.

OBSTETRICS AND GYNECOLOGY

By HAMILTON V. GAYDEN, M.D.
Suite 316 Doctors Building, Nashville

The Clinical Manifestations of Ectopic Gestation. Walter T. Dannreuther. *State J. of Connecticut*, Vol. 1, 104, November, 1936.

Ectopic pregnancy is one of the most serious types of abnormal gestation, for there is constant danger of hemorrhage. Ectopic implantation of the ovum usually follows a period of sterility

which has been caused by infection. This implantation can take place anywhere between the ovary and the uterus and the site is of great significance. If the ovum locates between the ovary and the ampulla, the end result is usually tubal abortion with a single hemorrhage which occurs in seventy per cent of all cases. If, however, the implantation is in the isthmus, the embryo cannot be aborted through the end of the tube and hence erodes through the wall into the peritoneal cavity or down into the broad ligament. In the latter case the hemorrhage is controlled between the layers of the ligament, but in the former case the result is often severe shock or death due to large hemorrhage.

The other two types of ectopic pregnancy are called interstitial and tuboovarian. All these abnormal pregnancies have somewhat similar general symptoms which consist of missed menstruation, irregular bleeding, nausea, some breast fullness, paroxysmal pain with severe exacerbation, constant abnormal soreness to palpation, occasional fainting, and slight fever. The objective evidence consists of a sensitive mass occasionally palpable, pain on cervical manipulation, a rapidly growing pulsating tumor, decidual cast, closed cervix, absent Hegar sign, moderate leucocytosis, evidence of internal hemorrhage, positive Cullen's sign and Aschheim-Zondec test, with blood in the cul-de-sac on puncture.

The author groups the cases according to the degree of fall of blood pressure and the accompanying rise in pulse rate. In his discussion, he emphasizes preoperative care, insisting it should be adequate and painstaking in order to reduce the dangers of operation. Absolute quiet, with considerable morphine for any activity, even coughing, can cause a resumption of hemorrhage. Any ectopic pregnancy, unless it aborts into the uterine cavity, should be operated upon.

The Management of the Minor Ailments of Pregnancy.
M. O. Wallace. J. Minn. Med., 19: 724, November, 1936.

The disorders discussed in this paper are met with very frequently in the experience of any doctor practicing obstetrics. They are not matters of life and death, seldom incapacitating the patient and sometimes the physician must even elicit the complaint, yet in the daily life of the pregnant woman they are very important and distressing.

Vaginal discharge during pregnancy is troublesome to about half of all gravidas. In general there are four main causes. In the presence of nonspecific endocervicitis, the cervix may be treated with ten per cent silver nitrate or left alone. Gonorrheal infections are not discussed. For trichomonas vaginitis the author has found satisfactory results with five per cent mixture of quinine sulphate in kaolin blown into the vagina. A vaginitis caused by monilia of the yeast family is quite refractory to nearly all forms of treatment except the application of gentian violet.

A series of 100 patients revealed forty-four had severe low back pain during pregnancy and fifty-one after pregnancy. A properly fitting maternity girdle designed to bind the pelvis and prevent increased lumbar lordosis is an excellent prophylactic measure.

The causes of leg pains and cramps are mainly two in number: (1) relative anoxemia of the muscles and (2) hypocalcemia. This complaint can be relieved by an adequate calcium ration and rest during the day with the feet higher than the hips in a recumbent position. Brewer's yeast is also being employed in an effort to combat these pains.

General dental health is poor enough at best, and in pregnancy the tendency to caries is enhanced to the extent of thirty-six per cent. The details of dietary requirements are discussed.

In the series of 100 patients one-sixth had a hemoglobin below forty-five per cent. These responded to large doses of iron.

"Heartburn" was present in over a third of this series in the last trimester. Elimination of fatty foods with alkalis gave satisfactory results.

Constipation was present in forty of the 100 patients. Mineral oil and those preparations with agar-agar are probably the best medicinal agents.

Vomiting of early pregnancy occurred in forty-seven per cent of this series. Administration of follicular hormone controlled this vomiting, and he warns again against avitaminosis, particularly B and C.

OPHTHALMOLOGY

By ROBERT J. WARNER, M.D.
Doctors Building, Nashville

The Retinal Complications of Nephritis. M. Danis.
American Journal of Ophthalmology, November, 1936.

This comprehensive study includes a brief history of the subject, a consideration of the retinal lesions, and finally of pathogenesis. From statistical study of forty-nine cases treated at the University of Brussels, the following conclusions are reached: When nephritis is complicated by retinitis the mortality increases considerably. Retinitis occurs in chronic glomerulonephritis, in renal sclerosis, in infectious glomerulonephritis, and in malignant hypertension; not in lipid nephrosis or in hemorrhagic nephritis. The general arterial tension is always increased in nephritis accompanied by retinitis. Albuminuric retinitis is always accompanied by arterial hypertension. Azotemia is very frequent but not constant. In the present state of our knowledge the mechanical vascular theory appears the most probable.

OTOLOGY, LARYNGOLOGY, RHINOLOGY

By W. W. POTTER, M.D.
Medical Building, Knoxville

Late Results Following Operation for Carcinoma of the Larynx. Edwin N. Broyles, M.D. *Archives of Otolaryngology*, Vol. 24, p. 475.

The author reviews the results of all the operations for carcinoma of the larynx performed between 1912 and 1932 at the Johns Hopkins Hospital. He begins his paper by stressing the importance of early diagnosis. He points out some well-known facts relative to the importance of painless hoarseness in the adult as the first symptom in laryngeal carcinoma. "Hoarseness is the danger signal, and until carcinoma can be definitely ruled out, it should be considered the cause of the hoarseness."

The author reviews the literature on carcinoma of the larynx, and from this review one gathers that most writers are agreed on most points relative to the treatment of this condition. The summary of the literature seems to bring out the following points. First, operation in the early stage of growth is preferable to radiation treatment. Second, by means of laryngofissure a high percentage of cancers in the early stage can be successfully treated. The motility of the cord is an important factor in determining the type of operation. If, in operation, the growth is found to be larger than it was expected to be, the type of operation must be changed; in other words, the surgeon should not set out to perform any particular type of operation. It is, also, the general opinion that there are definite fields for laryngofissure, hemilaryngectomy, and laryngectomy. The report is of twenty-six consecutive cases, twenty-five of which were squamous cell carcinoma, and one was a teratoma. All cases were given post-operative irradiation. One gathers from reading these reports that, in spite of all that can be done for these cases, most of them die with cancer either as a recurrence or in some other part of the body.

"The only cases in which a 'cure' was obtained were those in which careful operative removal of the entire tumor was carried out, followed by radiation treatment."

ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.
Medical Arts Building, Chattanooga

Congenital Cysts of the Lung from the Roentgenologic Viewpoint. B. R. Kirklin, M.D. *American Journal of Roentgenology and Radium Therapy*, Vol. 36, No. 1, July, 1936.

Until 1925 congenital cysts were considered very rare and of little clinical importance. Increasing numbers of cases have been reported from year

to year, and now it is realized that the condition occurs frequently enough to be carefully considered in the diagnosis of pulmonary lesions.

MORBID ANATOMY

The two general types as described by Koontz are (1) bronchial dilatation which shows muscle fibers and cartilage in the cyst walls and (2) cystic cavities resembling emphysematous blebs lying subpleurally. There are many transitional types between these two extremes. The cavities may or may not communicate with a bronchus. They are usually lined with columnar ciliated epithelium but may have nonciliated columnar epithelium, cuboid or flat epithelium, or no epithelium. A complete lack of pigment is characteristic of the congenital variety. They may be single or multiple, unilocular or multilocular, and may vary in size from one-half centimeter to cysts so large that they occupy more than half the thoracic cavity. They may contain fluid or air or both. Approximately twenty-five per cent of cases show involvement of both lungs. Twenty-five per cent show involvement of the right lung only, and fifty per cent of the left lung only.

CLINICAL MANIFESTATIONS

Symptoms may be cyanosis, cough, cardiac palpitation, and rarely hemoptysis. These symptoms vary according to the extent and site of the lesions and the presence or absence of increased intrathoracic pressure. When the cysts are small, no symptoms may exist, and the presence of the lesions may be made accidentally. The condition should be suspected in infants having recurring attacks of severe dyspnea with cyanosis and in adults who have progressive dyspnea without other apparent cause.

ROENTGEN FEATURES

Cysts that are completely filled with fluid and that do not have an inflammatory zone cast a round or ovoid, sharply circumscribed shadow which is of uniform density. When an inflammatory zone does exist, the outline of the shadow is hazy and cannot be distinguished from an abscess or pneumonic consolidation. When a cyst contains both air and fluid, the findings are so striking that the lesion is seldom overlooked. Such a lesion must be distinguished from abscess, tuberculous cavity, and a draining hydatid cyst. Large cysts containing air only are less apt to be confused with some other lesion. When such a cyst is very large it may be mistaken for pneumothorax. Usually in pneumothorax the compressed lung can be distinguished, and where necessary for diagnosis a slight pneumothorax can be induced by air injection, thus demonstrating the outer wall of the cyst. When multiple cysts are grouped together, it may be necessary to distinguish them from emphysema, diaphragmatic hernia, and bronchiectasis. Emphysematous blebs or bullae occur on the surface of the lung, while cysts usually occur in the substance of the lungs. Stereoscopic films will usually

distinguish between the two. In distinguishing cystic diseases from hernia of the stomach or colon into the thoracic cavity the absence of the usual diaphragmatic dome is of value. This is particularly true when chest films alone are available, and the history of the case is not known. A barium meal will always settle the diagnosis. It may be impossible to distinguish bronchiectasis from cystic disease when the cystic disease consists of numerous small cysts grouped together. The bronchiectasis does most often affect the bronchi at the bases, the lesions are often surrounded by dense fibrous tissue, and the bronchovascular markings are accentuated. When the cystic disease is complicated by the presence of some other conditions as pneumothorax, hydrothorax, empyema, pneumonia, tuberculosis or various other pulmonary diseases, the diagnosis may be impossible.

SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.
1400 Monroe Avenue, Memphis

Diagnosis of Atypical Appendicitis. William E. Lower, M.D., Cleveland, Ohio.

An appendix is not infrequently removed when the symptoms are due to a lesion of some other organ. On the other hand, cases do occur in which the appendix is the real cause of the symptoms, but they are referred to some other area. If the primary pain is over the usual location of the appendix, it is probable that the appendix is not the primary cause. Pain from a diseased appendix is occasionally referred to the left shoulder through branches of the superior mesenteric plexus. Nausea is an important symptom. Deaver has emphasized that appendicitis may be ruled out when vomiting precedes the pain.

Maximum tenderness usually is present over the point where the appendix is situated. If rigidity is present, it indicates an irritation of the parietal peritoneum. Fever and leucocytosis are not always present. A preponderance of polymorphonuclear cells in the differential count is a more reliable sign than the total count.

Roentgen examination is frequently a valuable aid in diagnosis. This, of course, is rarely advisable during an acute attack. The chief value of this procedure is the exclusion of abnormalities elsewhere which may cause symptoms simulating appendicitis. The roentgen examination is of value if the location of the disturbance is unusual, or if there is a tender mass which may represent a chronic abscess complicating a former attack of acute appendicitis. This will determine whether a mass is within or without the cecum. It will give valuable information in atypical cases seen in the interval between acute attacks. During the fluoroscopic examination palpation over the visualized

appendix will occasionally produce a heretofore unsolved epigastric distress.

Some of the common sites of atypical appendicitis are the following: when the appendix is low in the pelvis, it may produce symptoms referable to the bladder, rectum, and uterine appendages. In such cases it is essential to evade both a vaginal and a rectal examination. Cystoscopic examination should be made and a catheterized specimen of urine secured. Bladder symptoms such as frequency and pain on urination may be due to the proximity of the appendix to the serosa of the bladder. When the appendix is well down in the false pelvis, palpation does not elicit so much tenderness, because the appendix is in a much deeper position. The appendix may encircle the ileum, causing it to lose the power of contractility, and then produce incomplete or complete obstruction. Here there is almost continuous vomiting, distention of the abdomen, pain on palpation, but usually no rigidity. There may be a history of constipation for several days. Surgical intervention is the only procedure and should not be delayed.

Differentiation between an acute appendix lying in the pelvis and inflammation of the uterine appendages is often difficult. Sensitiveness toward the back and sacrouterine ligaments indicates adnexitis. As a rule the temperature in appendicitis is not as high, but the general condition of the patient is slightly worse. A pelvic examination will usually differentiate the two. Tenderness on pressure in the cul-de-sac is strongly indicative of salpingitis.

When the appendix is adherent to the peritoneum over the ureter, it may be confused with ureteritis or ureteral calculus. If there is tenderness to superficial pressure, it is probably due to an inflamed appendix. Roentgen examination is helpful when the possibility of a stone in the lower ureter is thought to be present.

When pieces of omentum are adherent to the appendix, distention of the abdomen will produce epigastric distress. An appendix high in the abdomen may simulate cholecystitis, pyelitis, or nephritis. In a case of acute cholecystitis muscular rigidity may interfere with the determination of the point of greatest tenderness. If morphine is given, usually the rigidity subsides, and this point can be determined. Urinalysis usually will differentiate appendicitis and pyelitis.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.
By G. A. WILLIAMSON, JR., M.D.
Medical Building, Knoxville

Relationship Between the Chemical Composition of Renal Calculi and Associated Bacteria. J. T. Priestley and Arnold E. Osterberg. *J. Urol.*, Vol. 36, No. 4, October, 1936.

During recent years all theories relative to the formation of urinary calculi have been modernized

and re-emphasized, and new theories have been advanced. These include: stasis, infection, vitamin deficiency, other dietetic errors, metabolic disorders, endocrine disturbances, abnormalities of the pH of the urine, alteration of the urinary colloid-crystalloid relationship, and ulcerations in the collecting portion of the kidney. These theories are more or less clinical explanations of contributing factors in the production of stones, but none give the full explanation of the condition alone. No doubt many of the abnormal states mentioned, working through a common process, are sufficient to cause the formation of calculi. The underlying etiological factor is not the same for all types of calculi, however.

This study was made, not with the idea of offering any new theories for the formation of stones, but for the purpose of correlating some of the clinical data presented by patients who had urinary calculi. The data were based on 193 cases who presented stones composed chiefly of calcium oxalate, calcium phosphate associated with calcium carbonate, and of urates. Cystine, xanthine, et cetera are not included because of insufficient data.

There were ninety-three cases with oxalate stones. Of these the formation in the kidney was eighty-six per cent, in the bladder fourteen per cent, with 12.9 per cent bilateral, and 6.4 per cent recurrent.

There were seventy-one cases with phosphate stones, sixty-nine per cent forming in the kidney, thirty-one per cent in the bladder, and 26.8 per cent were bilateral. Fourteen and one-tenth per cent were recurrent.

In the twenty-nine cases with urate stones, sixty-five per cent formed in the kidney, 34.5 per cent in the bladder, and 24.1 per cent were bilateral.

All types of calculi may be associated with infection. In some cases the infection apparently precedes the formation of stones, and at other times it seems to be a secondary development. Of the phosphate stones, 58.8 per cent were associated with infection, 28.1 per cent of the oxalate stones, and 21.1 per cent of the urate stones. It is to be noted that the majority of all calculi except phosphates were formed in sterile urine.

The types of organisms associated with the calculi were as follows: *Escherichia coli*, oxalate 7.1 per cent, phosphate 17.7 per cent, urate 5.3 per cent; *proteus ammoniata*, oxalate 3.4 per cent, phosphate 13.8 per cent, urate none; *aerobacter aerogenes*, oxalate 1.7 per cent, phosphate 3.8 per cent, urate 5.3 per cent; *pseudomonas*, oxalate, 5.4 per cent, phosphate 3.9 per cent, urate none; *staphylococcus*, oxalate 1.7 per cent, phosphate none, urate none; *tubercle bacilli*, oxalate none, phosphate 3.9 per cent, urate none; multiple organisms, oxalate 3.4 per cent, phosphate 7.8 per cent, urate none.

The average pH of the urine with oxalate calculi was 6.2, with urate calculi 5.3, and with phosphate calculi 6.2.

These data demonstrate that the phosphate calculi are associated with a higher percentage of infection, higher percentage of bilateral and recurring calculi, and a higher pH of the urine.

1936 MEMBERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

The following list of members of the Tennessee State Medical Association is published primarily for the purpose of detecting errors. It includes the names of those who were members on December 10, 1936.

Members are listed under the counties wherein they reside; if membership is held in another county, a note

to that effect follows the name of the member. Names of members who have died during the year are listed separately.

If any errors are found, kindly report them to THE JOURNAL, 508 Doctors Building, Nashville. Your co-operation will be appreciated.

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Leon Ward	OBION COUNTY	Thos. H. Phillips	Nicholas Gotten	O. S. McDavid	J. B. McElroy	<i>Oakville</i>
<i>Springhill</i>	<i>Troy</i>	R. F. Regester	Shields Abernathy	J. B. McElroy	J. L. McGhee	S. T. Rucker
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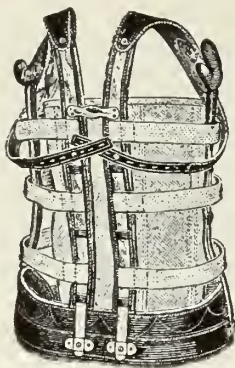
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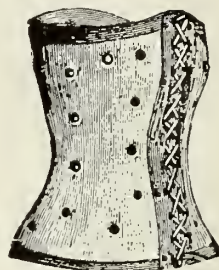
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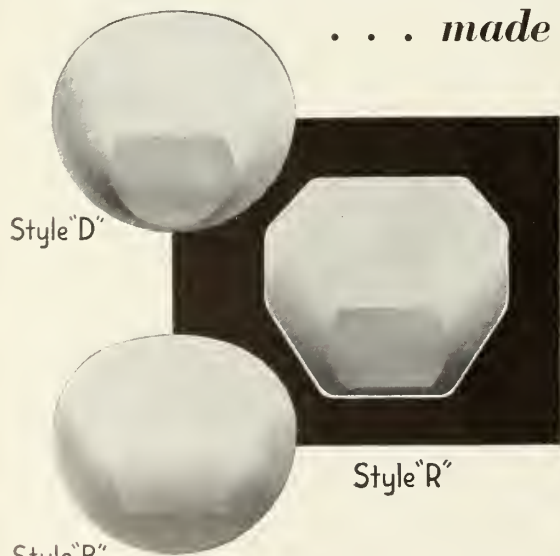
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